GRANTHAM RANCH EAST

Application for Master Planned Unit Development Approval
Project Narrative

Project Location

The project is located on the east side of Old Pasco Road near the intersection with Gillett Road (approximately 1,500 feet north of Overpass Rd.). The development is comprised of two parcels (29-25-20-0000-00600-0070 & 29-25-20-0000-00600-0000) situated within Section 29, Township 25S, Range 20E.

History

The subject parcel was originally known as Phase 1 of the Grantham Ranch MPUD. It is understood that all of the entitlements associated with this MPUD have expired and a rezoning is required to restore the previously approved entitlements.

Project Description

The project proposes up to 250 residential units be constructed on the 104.67± acre site. This density is less intense than both the 288 units previously approved for this parcel (Grantham Ranch MPUD - Phase 1) and the maximum permitted density of 276 units [(88.13 ac)*(3.0 du/ac)+(16.45 ac)*(3.0 du/ac)*(0.25) = 276units]. The proposed development will result in a gross density of (250 units) / (104.67 ac) = 2.39 dwelling units per acre.

The site does not contain any 'Critical Linkages', but it does contain Category II and Category III wetlands. At this conceptual level, exact quantities of permanent wetland impacts are difficult to determine; however, they are not anticipated to exceed 0.50 acres. Final design, including wetland impacts, will be reviewed and permitted by the regulatory agencies having jurisdiction over this project.

According to available Pasco County GIS, there are no Wellhead Protection Areas or Special Protection Areas for Community Water Supply Systems within the proposed development or within 1,000' of the proposed development.

The Owner will establish a homeowner's association that will be responsible for owning and maintaining common areas. These common areas are anticipated to include wetlands, stormwater ponds, park / recreation space, and buffer areas. The parks will be sized and designed in accordance with Section 905.1 of the County Land Development Code (LDC).

Potable water and sanitary sewer service will be provided by Pasco County Utilities. The water point of connection is an existing 12" PVC watermain located with Old Pasco Road right-of-way adjacent to the site. The sanitary sewer point of connection is still being coordinated with the utility department.

PASCO COUNTY ZONING AND SITE DEVELOPMENT
SUBMITTAL APPLICATION FORM
PRELIMINARY/CONSTRUCTION/STORMWATER MANAGEMENT PLAN

PROJECT NAME: Grantham Ranch East

PROJECT NO. (FROM DEVELOPMENT REVIEW DIVISION): _____

_____ OWNER:
NAME: CWES XXI, LLC.
ADDRESS: 334 East Lake Road #172
Palm Harbor, FL 34685-2427
TELEPHONE NO.: (727) 787 - 6330
E-MAIL: tom@jesproperties.com

_____ DEVELOPER:
NAME: CWES XXI, LLC.
ADDRESS: 334 East Lake Road #172
Palm Harbor, FL 34685-2427
TELEPHONE NO.: (727) 787 - 6330
E-MAIL: tom@jesproperties.com

_____ AUTHORIZED REPRESENTATIVE AND TITLE:
NAME: Douglas Weiland
ADDRESS: 334 East Lake Road #172
Palm Harbor, FL 34685-2427
TELEPHONE NO.: (727) 787 - 6330
E-MAIL: dweiland@jesproperties.com

X ENGINEER:
NAME: David Fleeman, P.E.
ADDRESS: 3910 US Highway 301 N Tampa, FL 33619-1282
TELEPHONE NO.: (813) 620 - 4500 ext 5136
E-MAIL: dfleeman@genesisgroup.com

NOTE: Indicate above with an "X" who will receive all correspondence concerning this submission and be responsible for actions concerning the review and approval process. All others will receive copies of the correspondence.

Type of review/approval being sought (reference Section 303, Common Procedures, Pasco County Land Development Code):

PSP-Small:	Preliminary Site Plan	_____	PSP-Large:	Preliminary Site Plan	_____
	Construction Site Plan	_____		Construction Site Plan	_____
	Stormwater Management Plan and Report	_____		Stormwater Management Plan and Report	_____
	Simultaneous	_____		Simultaneous	_____
MRS/LFLD:	Preliminary Development Plan	_____	PDP:	Preliminary Development Plan	X
	Stormwater Management Plan and Report	_____		Stormwater Management Plan and Report	X
	Construction Plan	_____		Construction Plan	X
	Simultaneous	_____		Simultaneous	_____

Fee: $34,437.00

OTHER: _____

DATE STAMP (FOR OFFICE USE ONLY)

SUBMITTED BY: Genesis Group

NAME: David Fleeman, P.E.
(Print)

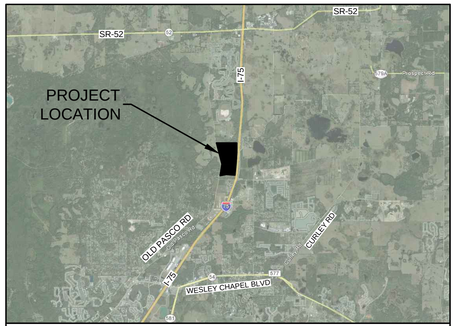
SIGNATURE: _____

E-MAIL: dfleeman@genesisgroup.com

CONSTRUCTION PLANS
FOR
GRANTHAM RANCH EAST
WESLEY CHAPEL, FL

NOTE:

DRAINAGE PLAN PROVIDED HEREIN IS BASED ON EXISTING FIELD CONDITIONS OF THE ABUTTING PROPERTIES.



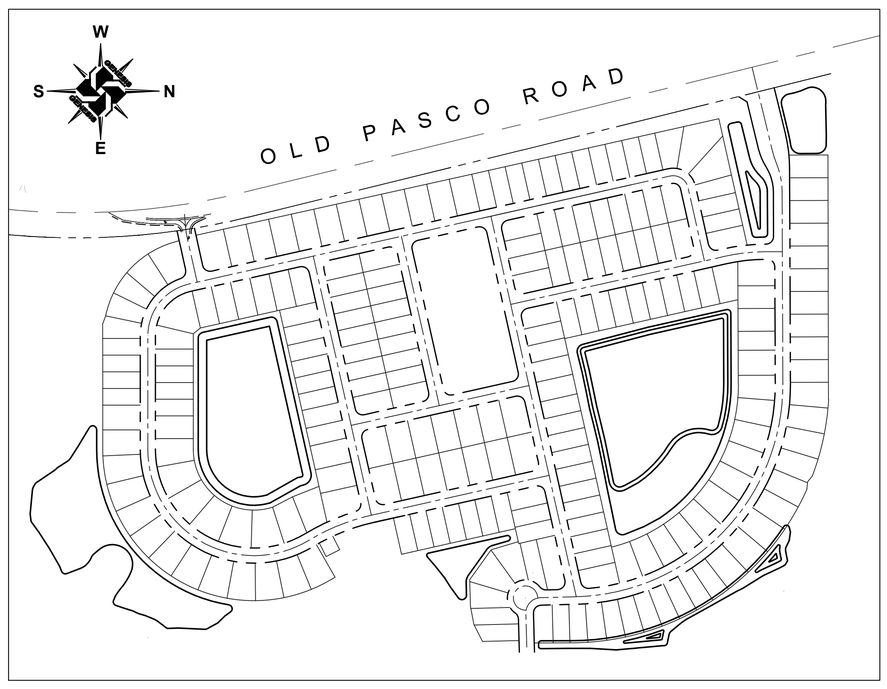
SECTION 29 TOWNSHIP 25S RANGE 20E

LOCATION MAP

NTS

PREPARED FOR:

CWES XXI, LLC
334 EAST LAKE RD. #172
PALM HARBOR, FL 34685
(727) 787-6330



PROJECT MAP

NTS 0 NTS
(IN FEET)
1 Inch = NTS Feet

INDEX OF DRAWINGS

Sheet Number	Sheet Title
C-01	Cover Sheet
C-02	General Notes
C-03	Existing Conditions & Demolition Plan
C-04	Preliminary Development Plan
C-05	Horizontal Control & Signing Plan
C-06	Erosion Control Plan
C-07	Lot Grading Plan
C-08	Lot Grading Plan
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C-10	Lot Grading Plan
C-11	Lot Grading Plan
C-12	Phase 1 Transition Grading
C-13	Road A Plan & Profile
C-14	Road A Plan & Profile
C-15	Road B Plan & Profile
C-16	Road C Plan & Profile
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C-31	Utility Plan
C-32	Utility Plan
C-33	Utility Plan
C-34	Typical Roadway Sections & Notes
C-35	Paving, Grading, & Drainage Details
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C-43	Pump Station Notes & Details
L-01	Landscape Plan
L-02	Landscape Plan
L-03	Landscape Plan
L-04	Landscape Plan
L-05	Landscape Plan
L-06	Landscape Plan
L-07	Landscape Notes and Details
L-08	Landscape Notes and Details

PREPARED BY:

GENESIS
FROM VISION TO REALITY
3910 N US HWY 301, SUITE 140 TAMPA, FL 33619
(813) 620-4500 Fax: (813) 620-4980

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: AS SHOWN
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000469 FL LB 0000610 FL LC-26000022

PREPARED FOR
CWES XXI, LLC

SEAL
DAVID B. FLEEMAN, P.E.
License Number 65362

SHEET TITLE
COVER SHEET

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-01

Printed: August 26, 2015 (2:46pm EST) by: asanyigo
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GENERAL CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE PERMIT AND INSPECTION REQUIREMENTS SPECIFIED BY THE VARIOUS GOVERNMENTAL AGENCIES, THE ENGINEER, AND THE ARCHITECT. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION, AND SCHEDULE ANY NECESSARY INSPECTIONS ACCORDING TO AGENCY INSTRUCTIONS. CONTRACTOR IS RESPONSIBLE FOR PREPARING AND PERMITTING ANY REQUIRED DEWATERING PLAN.
2. ALL SPECIFICATIONS AND DOCUMENTS REFERRED TO IN THESE PLANS SHALL BE OF THE LATEST REVISION.
3. ALL WORK PERFORMED SHALL COMPLY WITH THE REGULATIONS AND ORDINANCES OF THE VARIOUS GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP ARE TO BE IN ACCORDANCE WITH THE STRICTER OF THE PASCO COUNTY AND FDOT SPECIFICATIONS (LATEST EDITION).
4. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL PRE-CAST AND MANUFACTURED ITEMS TO THE OWNER'S ENGINEER FOR APPROVAL. FAILURE TO OBTAIN APPROVAL BEFORE FABRICATION AND/OR INSTALLATION MAY RESULT IN REMOVAL AND REPLACEMENT AT CONTRACTOR'S EXPENSE.
5. WORK PERFORMED UNDER THIS CONTRACT SHALL INTERFACE SMOOTHLY WITH OTHER WORK BEING PERFORMED BY OTHER CONTRACTORS AND UTILITY COMPANIES. IT WILL BE NECESSARY FOR THE CONTRACTOR TO COORDINATE AND SCHEDULE HIS ACTIVITIES, WHERE NECESSARY, WITH OTHER CONTRACTORS AND UTILITY COMPANIES (INCLUDE LIGHTING, POWER, TELEPHONE, CABLE, GAS, IRRIGATION, ETC...).
6. THE WATER, SANITARY SEWER, AND STORM DRAINAGE FACILITIES ARE SUBJECT TO THE REVIEW AND APPROVAL OF APPLICABLE AGENCIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN THE REQUIRED PERMITS TO PERFORM ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
7. IT WILL BE NECESSARY TO EXAMINE, COORDINATE AND ADJUST ACCORDINGLY THE PROPOSED LOCATIONS OF THE VARIOUS COMPONENTS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUBMIT COORDINATION DRAWINGS SHOWING PIPE SIZES, STRUCTURES, AND ELEVATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SCHEDULING AND COORDINATION OF THE UNDERGROUND WORK ASSOCIATED WITH THIS PROJECT.
8. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY ENVIRONMENTAL PROTECTION AGENCY (EPA) PERMITTING WHERE REQUIRED. THIS INCLUDES FILING A NPDES NOTICE OF INTENT, IF REQUIRED.
9. ALL UNDERGROUND UTILITIES (INCLUDING CONDUIT & SLEEVES) MUST BE IN PLACE AND TESTED OR INSPECTED PRIOR TO BASE AND PAVEMENT CONSTRUCTION.
10. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES (ABOVE OR BELOW GROUND) THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED BY THE CONTRACTOR CALLED FOR IN THIS CONTRACT.
11. CONTRACTOR SHALL COORDINATE PRE-CONSTRUCTION CONFERENCE WITH AGENCIES HAVING JURISDICTION.
12. CONSTRUCTION SHALL ADHERE TO THE APPLICABLE GOVERNMENT AGENCY CRITERIA, PERMIT CONDITIONS, AS WELL AS SPECIFICATIONS PROVIDED BY OWNER.
13. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE OWNER CONCERNING LIMITS OF CONSTRUCTION, TRANSITIONS, ETC. WHICH MAY NOT BE SHOWN ON THESE PLANS.
14. ANY ON-SITE WELLS NOT PROPOSED TO REMAIN ARE TO BE SEALED BY A LICENSED WELL CONTRACTOR IN ACCORDANCE WITH 40D-3.517.
15. ALL PRACTICABLE AND NECESSARY EFFORT SHALL BE TAKEN DURING CONSTRUCTION TO CONTROL AND PREVENT EROSION AND TRANSPORT OF SEDIMENT MATERIAL TO INLETS, SURFACE DRAINS, WETLANDS AND LAKE AREAS. CONTRACTOR IS TO PREPARE, IMPLEMENT, AND MAINTAIN A EROSION CONTROL PLAN IN CONFORMANCE WITH THE 'FLORIDA STORMWATER, EROSION, AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL'. CONTRACTOR IS RESPONSIBLE FOR INSPECTION AND REPORTING REQUIREMENTS ASSOCIATED WITH NPDES PERMIT (IF REQUIRED). THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATION EFFORTS THAT MAY BE REQUIRED.
16. THE CONTRACTOR IS TO CONTROL ALL FUGITIVE DUST ORIGINATING ON THIS PROJECT BY WATERING OR OTHER METHODS AS REQUIRED. CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS NOT SPECIFICALLY ADDRESSED ON THE LANDSCAPE ARCHITECTURE PLANS WITH HYDROSEED OR SOD (4:1 OR STEEPER).
17. SEE FDOT DESIGN STANDARDS INDEX 001 FOR STANDARD ABBREVIATIONS DENOTED IN THIS PLAN SET.
18. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL FURNISH OWNER'S ENGINEER WITH COMPLETE "AS-BUILT" INFORMATION CERTIFIED BY A REGISTERED LAND SURVEYOR. UPON COMPLETION, THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH A COMPACT DISK CONTAINING THE ELECTRONIC COPY OF THE AUTOCADD DRAWING FILE OF EACH SHEET AND FIVE SETS OF SIGNED AND SEALED PRINTS. THE "AS-BUILT" INFORMATION SHALL CLEARLY AND ACCURATELY REPRESENT ALL CONSTRUCTED ITEMS INCLUDING, BUT NOT LIMITED TO:
    a. ELEVATIONS OF ALL STORM SEWER OUTFALL STRUCTURES AND SANITARY SEWER STRUCTURE BOTTOMS, TOPS, AND INVERTS.
    b. FIELD MEASURED LENGTHS OF PIPES FOR ALL INSTALLED UTILITIES, CONDUITS, SLEEVES, ETC.
    c. LOCATIONS OF ALL STRUCTURES, PIPES, CONDUITS, SLEEVES, ETC.
    d. DIMENSIONS AND ELEVATIONS OF STORWATER CONTROL STRUCTURES (WEIRS, SKIMMERS, GRATES, ORIFICES, ETC.)
    e. CALCULATED SLOPE OF ALL SANITARY SEWER AND STORM SEWER LINES.
    f. HORIZONTAL AND VERTICAL CONTROL OF ALL WATER MAIN FITTINGS AND APPURTENANCES, AND HORIZONTAL AND VERTICAL CONTROL ON THE TOP OF WATER MAINS AT ALL CROSSINGS, AND A MINIMUM OF EVERY 200 LINEAL FEET OF PIPE.
    g. HORIZONTAL AND VERTICAL CONTROL OF ALL TOP OF BANKS, TOE OF SLOPES, ALL GRADE BREAKS, BUILDINGS, PONDS, DITCHES, LITTORAL ZONES, ETC.
    h. HORIZONTAL AND VERTICAL CONTROL ELEVATIONS OF ALL ELEMENTS OF SANITARY SEWER LIFT STATIONS INCLUDING TOP AND BOTTOM SLABS, INVERTS, ELEVATIONS AT WHICH THE FLOAT SWITCHES ENGAGE, ALL VALVES AND ASSOCIATED APPURTENANCES.
    i. NO ENGINEER'S CERTIFICATIONS CAN BE SUBMITTED TO OBTAIN A CERTIFICATE OF OCCUPANCY UNTIL THE "AS-BUILT" INFORMATION IS RECEIVED, REVIEWED, AND APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL ALLOW THE ENGINEER A MINIMUM OF FOUR WEEKS TO COMPLETE THE REVIEW OF THE "AS-BUILT" INFORMATION UPON RECEIPT, PRIOR TO SUBMITTAL TO APPLICABLE AGENCIES.
    j. CONTRACTOR SHALL ALSO SUPPLY A COMPLETED VERSION OF ANY AGENCY REQUIRED ASSET DATA FORMS.
    k. INFORMATION SPECIFICALLY REQUIRED BY THE LOCAL AGENCY.

SAFETY NOTES

1. DURING THE CONSTRUCTION AND MAINTENANCE OF THIS PROJECT, ALL SAFETY REGULATIONS ARE TO BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF HIS PERSONNEL.
2. THE CONTRACTOR'S MAINTENANCE OF TRAFFIC (MOT) PLAN MUST BE PREPARED BY A QUALIFIED PROFESSIONAL ENGINEER AND APPROVED BY APPLICABLE AGENCIES PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES.
3. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF TRANSPORTATION.
4. CONTRACTOR SHALL PROVIDE AND MAINTAIN SAFETY EQUIPMENT IN ACCORDANCE WITH BOTH CONTRACTOR'S HEALTH & SAFETY PROGRAM AND ALL OTHER APPLICABLE LEGAL AND HEALTH AND SAFETY REQUIREMENTS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR PROVIDING IT'S EMPLOYEES AND SUB CONTRACTORS WITH ADEQUATE INFORMATION AND TRAINING TO ENSURE THAT ALL EMPLOYEES AND SUB CONTRACTORS AND SUB CONTRACTOR'S EMPLOYEES COMPLY WITH ALL APPLICABLE REQUIREMENTS. CONTRACTOR SHALL REMAIN IN COMPLIANCE WITH ALL OCCUPATION SAFETY AND HEALTH REGULATIONS AS WELL AS THE ENVIRONMENTAL PROTECTION LAWS. THE FOLLOWING IS NOT TO BE PERCEIVED AS THE ENTIRE SAFETY PROGRAM BUT JUST BASIC REQUIREMENTS.
    a. ALL EXCAVATIONS BY THE CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF THE DEPARTMENT OF LABOR'S OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND REGULATIONS AND FLORIDA TRENCH SAFETY ACT. PARTICULAR ATTENTION MUST BE PAID TO THE CONSTRUCTION STANDARDS FOR EXCAVATIONS, 29 CFR PART 1926, SUBPART P.
    b. THE MINIMUM STANDARDS AS SET FORTH IN THE CURRENT EDITION OF "THE STATE OF FLORIDA, MANUAL ON TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS" SHALL BE FOLLOWED IN THE DESIGN APPLICATION, INSTALLATION, MAINTENANCE AND REMOVAL OF ALL TRAFFIC CONTROL DEVICES, WARNING DEVICES AND BARRIERS NECESSARY TO PROTECT THE PUBLIC AND WORKMEN FROM HAZARDS WITHIN THE PROJECT LIMITS.
    c. ALL TRAFFIC CONTROL MARKINGS AND DEVICES SHALL CONFORM TO THE PROVISIONS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PREPARED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION.IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATIONS.
    d. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN AREAS OF BURIED UTILITIES AND SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE UTILITY COMPANIES PRIOR TO CONSTRUCTION TO OBTAIN FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES. CALL SUNSHINE STATE ONE CALL AT 800-432-4770.

DEMOLITION NOTES

1. CONTRACTOR TO REMOVE AND DISPOSE OF ALL EXISTING OCCUPATION AS NECESSARY TO CONSTRUCT PROPOSED IMPROVEMENTS.
2. CONTRACTOR TO ESTABLISH AND PROPERLY FLAG PROPERTY LINES PRIOR TO DEMOLITION.
3. THE CONTRACTOR SHALL INSTALL EROSION CONTROL PRIOR TO DEMOLITION AND MAINTAIN DURING DEMOLITION, REFER TO GENERAL CONSTRUCTION NOTES. (ROOT PRUNING MUST BE COMPLETED PRIOR TO INSTALLING SILT FENCE WITHIN THE DRIPLINE OF ANY EXISTING TREE PROPOSED TO REMAIN – SEE ROOT PRUNING NOTE).
4. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIAL GENERATED FROM THE SITE CLEARING / DEMOLITION PROCESS, INCLUDING BUT NOT LIMITED TO: TREES, STUMPS, TRASH, VEGETATION, ASPHALT AND CONCRETE PAVEMENT, REINFORCED CONCRETE PAVEMENT, SITE STRUCTURES AND WALLS, PVC AND DIP PIPE. THIS MATERIAL SHALL BE DISPOSED OF OFF-SITE AT A PERMITTED SITE SELECTED BY THE CONTRACTOR. BURYING OF THESE MATERIALS ON-SITE SHALL NOT BE PERMITTED. BURNING OF VEGETATION IS ACCEPTABLE PROVIDED THE CONTRACTOR OBTAIN ALL REQUIRED STATE AND LOCAL PERMITS.
5. INFORMATION TAKEN FROM SURVEY PREPARED BY POLARIS ASSOCIATES, INC. DATED OCT. 26, 2013 (BOUNDARY); CROSSTOWN SURVEYORS DATED FEB. 23, 2014 (WETLAND), AND MARCH 31, 2014 (TOPO).
6. UTILITIES TO BE PLUGGED SHALL BE FILLED WITH A MINIMUM 1.0 CUBIC FT. OF NON SHRINK GROUT OR AS OTHERWISE APPROVED BY ENGINEER, PRESSURE MAINS SHOULD BE CAPPED OR PLUGGED AND RESTRAINED WITH A REVERSE DEADMAN. RCP SHOULD RECEIVE A BRICK AND MORTAR PLUG.
7. TREES SHOWN TO REMAIN SHALL MAINTAIN PROTECTIVE BARRIERS AT ALL TIMES. THESE BARRIERS SHALL BE IN ACCORDANCE WITH CURRENT PASCO COUNTY STANDARDS.
8. ALL TREE ROOTS EXISTING WITHIN APPROVED IMPROVEMENT AREAS AND ORIGINATING FROM A PROTECTED TREE, SHALL BE SEVERED CLEAN AT THE LIMITS OF THE PRESERVED AREA IN ACCORDANCE WITH ANSI-A-300 PRUNING STANDARDS (WHERE INDICATED). ROOT PRUNING TO BE CONDUCTED BY AN ARBORIST CERTIFIED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) OR A REGISTERED CONSULTING ARBORIST WITH THE AMERICAN SOCIETY OF CONSULTING ARBORISTS (ASCA).
9. THE CONTRACTOR SHALL COORDINATE THE REMOVAL/RELOCATION OF EXISTING UTILITIES WITH THE OWNER OF SAID UTILITY. THIS SHALL INCLUDE BUT NOT BE LIMITED TO WATER, SEWER, GAS, CABLE TV, POWER AND TELEPHONE.
10. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO DEMOLITION AND WILL BE RESPONSIBLE FOR THE DAMAGE OF ANY ON-SITE OR OFF-SITE UTILITIES THAT ARE NOT A PART OF THIS PROJECT OR ARE NOT IDENTIFIED TO BE REMOVED.
11. THE CONTRACTOR SHALL BARRICADE THE SITE AND CONTROL TRAFFIC PER CURRENT FDOT TRAFFIC CONTROL STANDARDS.
12. ALL ABOVE GROUND IMPROVEMENTS (IE: PAVEMENT, CURBING, BUILDINGS, SIGNAGE, CONCRETE WALKS, POLES, INLETS, ETC...) AND BELOW GROUND IMPROVEMENTS (IE: SANITARY, STORM, WATER, CABLE, ELECTRIC, PHONE, ETC...) SHALL REMAIN UNLESS OTHERWISE NOTED.
13. UNSUITABLE MATERIAL IS TO BE REMOVED FROM LANDSCAPE AREAS. A MINIMUM OF 8" TOPSOIL IS REQUIRED IN ALL LANDSCAPE AREAS.
14. THE OWNER RESERVES THE RIGHT TO RETAIN ANY ITEM FROM THE DEMOLITION OF THE SITE DEEMED VALUABLE.
15. ALL EXISTING CONCRETE/ASPHALT OCCUPATION DESIGNATED TO BE REMOVED IS TO BE SAWCUT ALONG THE LIMITS OF DEMOLITION.

SIGNING AND PAVEMENT MARKING NOTES

1. ALL SIGNS AND PAVEMENT SHALL CONFORM TO THE U.S. DEPARTMENT OF TRANSPORTATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" 2009 EDITION INCLUDING REVISION DATED MAY 2012 AND THE FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS FOR DESIGN, CONSTRUCTION, MAINTENANCE, AND UTILITY OPERATIONS ON THE STATE HIGHWAY SYSTEM (DATED 2013).
2. ALL PAVEMENT MARKINGS SHALL BE LEAD-FREE, NON-SOLVENT BASED THERMOPLASTIC, COMPLIANT WITH SECTION 711 OF STANDARD SPECIFICATIONS, AND LISTED ON QPL, UNLESS NOTED OTHERWISE. THERMOPLASTIC SHALL BE INSTALLED A MINIMUM OF 14 DAYS AFTER THE FIRST APPLICATION OF PAINT BUT PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
3. PAINTED PAVEMENT MARKINGS SHALL COMPLY WITH SECTION 710 OF STANDARD SPECIFICATIONS AND BE LISTED ON QPL. (TWO COATS APPLIED 14 DAYS APART)
4. REFER TO FDOT DESIGN STANDARDS INDEX NO. 17352 FOR RETRO-REFLECTIVE PAVEMENT MARKER PLACEMENT DETAILS.
5. PAINT ALL MEDIAN NOSES AND RAISED ISLAND NOSES REFLECTIVE WHITE OR REFLECTIVE YELLOW AS INDICATED IN THE PLANS.
6. THE SIGN LOCATIONS SHOWN ARE APPROXIMATE AND MAY REQUIRE FIELD ADJUSTMENTS BY CONTRACTOR TO COMPLY WITH MUTCD PLACEMENT CRITERIA.
7. ANY EXISTING SIGN DESIGNATED TO REMAIN THAT IS DISTURBED DURING CONSTRUCTION OR RELOCATED SHALL BE RESET TO CURRENT STANDARDS FOR HEIGHT, OFFSET AND METHOD OF INSTALLATION.
8. CAUTION SHALL BE EXERCISED WHILE RELOCATING EXISTING SIGNS SO AS TO PREVENT DAMAGE TO THE SIGNS. IF THE SIGNS ARE DAMAGED BEYOND USE, AS DETERMINED BY THE ENGINEER, THEY SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE.
9. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THE LENGTH OF THE COLUMN SUPPORTS IN THE FIELD PRIOR TO FABRICATION.
10. THE CONTRACTOR SHALL USE W-SHAPE STEEL POST FOR ALL MULTI-POST SIGNS. ALUMINUM ROUND TUBES SHALL BE USED FOR ALL SINGLE POST SIGNS.
11. ACCESSIBLE SPACES SHALL BE MARKED AND SIGNED IN ACCORDANCE WITH FDOT INDEX 17346 UNLESS OTHERWISE NOTED.
12. ALL STOP SIGN (R1-1) ASSEMBLIES SHALL INCLUDE STREET NAME BRACKETS AND BLADES
13. STREET NAME SIGN BLADES SHALL 6" HIGH WITH 4" SERIES C LETTERS (GREEN BACKGROUND WITH WHITE LETTERS AND BORDERS). STREET NAME SIGNS SHALL MEET THE REQUIREMENTS OF MUTCD FOR D3 SERIES SIGNS.

TRAFFIC CONTROL GENERAL NOTES

1. THE MAINTENANCE OF TRAFFIC SHALL CONFORM TO THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" (MUTCD)" LATEST EDITION" AND THE FDOT DESIGN STANDARDS FOR DESIGN, CONSTRUCTION, MAINTENANCE, AND UTILITY OPERATIONS ON THE STATE HIGHWAY SYSTEM, LATEST EDITION.
2. THE MINIMUM TEMPORARY LANE WIDTH ALLOWED WILL BE 10 FEET.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 24 HOURS IN ADVANCE OF ANY LANE CLOSURES.
4. THE CONTRACTOR SHALL NOTIFY ALL LOCAL LAW ENFORCEMENT AND EMERGENCY/RESCUE AGENCIES LOCATED IN THE PROJECT VICINITY 24 HOURS IN ADVANCE OF ANY PROPOSED LANE CLOSURES AND/OR DETOURS.
5. TEMPORARY REFLECTIVE PAVEMENT MARKERS SHALL BE PROVIDED ON ALL TEMPORARY LANE LINES AND MEDIAN EDGE LINES IN ACCORDANCE WITH INDICES 600 AND 17352.
6. LANE CLOSURES WILL BE NOT ALLOWED BETWEEN THE HOURS OF 7:00 A.M. TO 9:00 A.M. AND 4:00 P.M. TO 7:00 P.M. LANE CLOSURES OR DETOURS WILL NOT BE PERFORMED DURING HOLIDAY PERIODS INCLUDING THE WEDNESDAY NIGHT PRIOR TO THANKSGIVING DAY.

STREET LIGHTING NOTES

1. STREET LIGHTS SHALL BE PROVIDED IN ACCORDANCE WITH CHAPTER 901.11 OF THE PASCO COUNTY LAND DEVELOPMENT CODE.

CERTIFICATION

1. THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH THE MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION, AND MAINTENANCE FOR STREETS AND HIGHWAYS, STATE OF FLORIDA IN EFFECT AT THE TIME OF PASCO COUNTY APPROVAL, AND ARE IN COMPLIANCE WITH THE STANDARDS THEREIN EXCEPT AS NOTED ON THE PLANS. ANY DEVIATIONS NOTED ON THE PLANS SUBSTANTIALLY COMPLY WITH THE INTENT OF THE STANDARDS.

FIRE PROTECTION

1. SEE SHEET C-38 – UTILITY NOTES FOR ADDITIONAL INFORMATION.

FEMA MAP

1. SITE IS LOCATED IN ZONES 'X' AND 'AE' PURSUANT TO FEMA MAP NUMBER(S) 12101C0264F AND 12101C0262F WITH AN EFFECTIVE DATE OF SEPTEMBER 26, 2014.

LISTED SPECIES

1. LISTED SPECIES SURVEY WAS CONDUCTED BY FLATWOODS CONSULTING GROUP AND DOCUMENTED IN JULY 23, 2013 REPORT ENTITLED "PRELIMINARY WETLAND DELINEATION AND LISTED SPECIES SURVEY".

OWNER:
DOUGLAS WEILAND
CWES XXI, LLC.
334 EAST LAKE ROAD, #172
PALM HARBOR, FLORIDA 34685
(727) 787-6330
DWEILAND@JESPROPERTIES

DEVELOPER:
DOUGLAS WEILAND
JES PROPERTIES, INC.
334 EAST LAKE ROAD, #172
PALM HARBOR, FLORIDA 34685
(727) 787-6330
DWEILAND@JESPROPERTIES

CIVIL ENGINEER:
DAVID FLEEMAN, PE
GENESIS
3910 US 301 N; SUITE 140
TAMPA, FLORIDA 33619
(813) 620-4500 EXT.5136
DFLEEMAN@GENESISGROUP.COM

PROJECT SURVEYOR:
DENNIS BENHAM, PSM
CROSSTOWN SURVEYORS
12441 ADVENTURE DRIVE
RIVERVIEW, FLORIDA 33579
(813) 741-1555
DJBENHAM@TAMPABAY.RR.COM

SURVEY NOTES

1. BOUNDARY SURVEY PROVIDED BY POLARIS ASSOCIATES, INC. (LB# 6113).
2. TOPOGRAPHIC, TREE, AND WETLAND SURVEY PROVIDED BY CROSSTOWN SURVEYORS (LB# 7243).
3. VERTICAL DATUM: THE ELEVATIONS SHOWN HEREON ARE REFERENCED TO NAVD 1988. PARENT BENCHMARK IS PASCO COUNTY BENCH MARK No. T-680, A CONCRETE MONUMENT THAT LIES 29 FEET NORTH OF THE CENTERLINE OF GILLETTE ROAD AND 39.3 FEET EAST OF THE CENTERLINE OF OLD PASCO ROAD (ELEV. = 89.37)
4. BEARINGS BASED ON THE NORTH LINE OF THE NORTHWEST 1/4 OF SECTION 29, TOWNSHIP 25 S, RANGE 20 E, BEING S89°55'21"W.
5. UNDERGROUND UTILITIES, ENCROACHMENTS OR IMPROVEMENTS NOT LOCATED BY THIS SURVEY.

GEOTECHNICAL NOTES

1. CONTRACTOR SHALL BECOME FAMILIAR WITH THE 'REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ANALYSIS' PREPARED FOR THE GRANTHAM RANCH EAST PROJECT BY ECS FLORIDA, LLC, DATED JANUARY 22, 2015 (ECS PROJECT NO. 41-1325).
2. OPINION OF CUT / FILL PREDICATED ON DISCING EXISTING PASTURE UNTIL ORGANIC CONTENT IS BELOW 5%. CONTRACTOR TO COORDINATE WITH PROJECT GEOTECHNICAL ENGINEER REGARDING TESTING FREQUENCY.
3. CONTRACTOR SHALL COORDINATE WITH PROJECT GEOTECHNICAL ENGINEER REGARDING REQUIRED SOIL BLENDING THAT MAY BE REQUIRED TO MEET 'STRUCTURAL FILL' DESIGNATION.

PROJECT EARTHWORK

1. OPINION OF PROBABLE EARTHWORK INCLUDES:
   356,000 CY CUT
   293,000 CY FILL
   63,000 CY EXCESS CUT

SITE PLAN AND COORDINATE GEOMETRY

1. ALL POINTS AND MONUMENTS SHALL BE SURVEYED UPON MOBILIZATION TO VERIFY THEIR ACCURACY. ANY DISCREPANCIES DISCOVERED MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING PRIOR TO CONSTRUCTION.
2. MONUMENTS AND OTHER SURVEY CONTROL POINTS SHALL BE PROTECTED FROM DAMAGE AND DISTURBANCE. IF ANY CONTROL POINTS ARE DAMAGED OR DISTURBED, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER AND REPLACE THE CONTROL POINTS TO THEIR ORIGINAL CONDITION AT HIS OWN EXPENSE.
3. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES AFFECTING THIS WORK PRIOR TO CONSTRUCTION.
4. DIGITAL OR ELECTRONIC REPRESENTATION OF THESE CONSTRUCTION PLANS DOES NOT CONSTITUTE A COORDINATE CONTROL MAP OR MATHEMATICALLY CONTROLLED INFORMATION FOR THE USE OF CONSTRUCTION STAKEOUT. IT IS THE RESPONSIBILTY OF THE CONTRACTOR AND/OR THE CONTRACTOR'S SURVEYOR TO ENSURE THAT ANY DIGITAL OR ELECTRONIC REPRESENTATION OF THESE PLANS IS IN COMPLETE CONFORMANCE WITH ALL OF THE NOTATIONS, SPECIFICATIONS, DETAILS AND OTHER DATA APPEARING ON OR AS MAY BE DERIVED FROM THESE CONSTRUCTION PLANS.
5. ALL DIMENSIONS SHOWN ON PLAN ARE TO FACE OF BUILDING, EDGE OF PAVEMENT, BACK OF CURB OR CENTERLINE OF STRUCTURE, UNLESS NOTED OTHERWISE.

TESTING SCHEDULE

ITEM	TEST	TEST FREQUENCY
EMBANKMENT	OPTIMUM MOISTURE / MAXIMUM DENSITY	PER SOIL TYPE
	100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T99-57 (METHOD C), NO TOLERANCE	ONE PER 500' HORIZONTALLY, IN ONE (1) FOOT LIFTS
	GRADATION 1-T027	1/500' SECTION PER LIFT
	PROCTOR 1-T180	PER MATERIAL TYPE
	PROCTOR 5-525	PER MATERIAL TYPE
	DENSITY 1-T238	1/500' SECTION PER LIFT
UTILITY TRENCH BACKFILL		
OVER PIPELINES AND AROUND STRUCTURES FROM R.O.W. LINE TO R.O.W. LINE	OPTIMUM MOISTURE / MAXIMUM DENSITY	PER SOIL TYPE
	100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T99-57 (METHOD C), NO TOLERANCE	(SEE NOTES 1 AND 2)
OVER PIPELINES AND AROUND STRUCTURES OUTSIDE THE R.O.W. LINE	OPTIMUM MOISTURE / MAXIMUM DENSITY	PER SOIL TYPE
	100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T99-57 (METHOD C), NO TOLERANCE	(SEE NOTE 1)
STABILIZED SUBGRADE	OPTIMUM MOISTURE / MAXIMUM DENSITY	PER MATERIAL TYPE
	MINIMUM 40 LBR	PER MATERIAL TYPE (SEE NOTE 4)
	MINIMUM 20 LBR (FOR SOIL CEMENT ONLY)	SAME AS FOR 40 LBR (SEE NOTE 4)
	98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T180-57 (ASTM D1557-70), NO TOLERANCE	(SEE NOTE 3)
BASE (OTHER THAN SOIL CEMENT OR CRUSHED CONCRETE)	OPTIMUM MOISTURE / MAXIMUM DENSITY	PER SOURCE
	MINIMUM 100 LBR	PER SOURCE
	98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T180-57 (ASTM D1557-70), NO TOLERANCE	(SEE NOTE 3)
	GRADATION, ATTERBERG LIMITS	PER SOURCE
SOIL CEMENT BASE	MIX DESIGN	PER MATERIAL TYPE
	OPTIMUM MOISTURE / MAXIMUM DENSITY	PER MATERIAL TYPE DAILY
	PROCTOR 1-T180	PER MATERIAL TYPE
	COMPRESSIVE STRENGTH SPECIMENS	ONE SET OF THREE (3) PER MATERIAL TYPE DAILY
	TEST CORES, THICKNESS	(SEE NOTE 3)
	98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T134, NO TOLERANCE	(SEE NOTE 3)
CRUSHED CONCRETE BASE	MINIMUM LBR 150	3/STREET TO OBTAIN AN AVERAGE OF 150
	LIQUID LIMIT AS DETERMINED BY AASHTO T80 (LESS THAN 25)	PER MATERIAL TYPE
	PLASTICITY INDEX AS DETERMINED BY AASHTO T90 (LESS THAN 4)	PER MATERIAL TYPE
	ABRASION	PER LOS ANGELES ABRASION (FM-1T090) (50 MIN) PER MATERIAL TYPE
	100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T180	PER MATERIAL TYPE
CONCRETE	SLUMP TEST	ONE PER SET OF CYLINDERS
	COMPRESSIVE STRENGTH CYLINDERS	ONE SET OF THREE (3) CYLINDERS FOR 100 CY OR FRACTION THEREOF
	AIR CONTENT	ONE PER SET OF CYLINDERS
SUPERPAVE ASPHALT	AGGREGATE ANALYSIS	PER FDOT
	DESIGN MIX	ONE PER FDOT APPROVED TYPE
	BITUMEN CONTENT	PER FDOT
	THICKNESS	(SEE NOTE 3)
	MAXIMUM SPECIFIC GRAVITY (GMM)	PER FDOT
	92% OF LAB DENSITY (LESS THAN 90% AREA MUST BE REMOVED AND REPLACED)	(SEE NOTE 3)

1. TESTS SHALL BE LOCATED NO MORE THAN 500 FT APART. TESTS SHALL BE PERFORMED ON EACH LIFT, EXCEPT THAT TESTS SHALL NOT BE FURTHER APART THAN ONE (1) FOOT VERTICALLY. FIELD DENSITIES SHALL BE TAKEN OVER ALL ROAD CROSSINGS. FIELD DENSITIES FOR SANITARY LINES SHALL BE STAGGERED TO INCLUDE RESULTS OVER SERVICE LATERALS. THERE SHALL BE A MINIMUM OF ONE (1) TEST SERIES FOR EACH ONE (1) FOOT OF LIFT OVER PIPELINE BETWEEN MANHOLES. TESTS AROUND STRUCTURES SHALL BE SPIRALED IN ONE (1) FOOT LIFTS. FOR ALL TYPE PIPE, FILL TO BE COMPACTED BENEATH THE HAUNCHES USING SUITABLE TAMPERS. FOR PIPE LESS THAN 24" IN DIAMETER, BACKFILL IN APPROPRIATE LIFTS AND TEST FROM THE TOP OF THE PIPE AND EVERY ONE (1) FOOR VERTICALLY THEREAFTER. FOR PIPE 24" TO 72" IN DIAMETER, BACKFILL IN APPROPRIATE LIFTS AND TEST FROM THE SPRINGLINE AND EVERY ONE (1) FOOT VERTICALLY THEREAFTER. FOR PIPE LARGER THAN 72", TESTS SHALL BEGIN ONE (1) FOOT ABOVE THE BASE OF THE TRENCH.
2. FOR FLEXIBLE PIPE (CORRUGATED STEEL OR ALUMINUM), 95% OF MAXIMUM DENSITY (AASHTO-T99) PER FDOT SPECIFICATIONS SUBARTICLE 125-9.2.1.
3. TESTS SHALL BE LOCATED NO MORE THAN 500 FEET APART. THERE SHALL BE NO LESS THAN ONE (1) TEST PER STREET. NO CORE SHALL BE LESS THAN SPECIFIED MINIMUM THICKNESS.
4. TESTING FOR THE SUBGRADE BEARING CAPACITY AND COMPACTION SHALL BE LOCATED NO MORE THAN 500 FT APART AND SHALL BE STAGGERED TO THE LEFT, RIGHT, AND ON THE CENTERLINE OF THE ROADWAY. THERE SHALL BE NO LESS THAN THREE (3) TESTS PER STREET TO OBTAIN AN AVERAGE LBR 40 VALUE. PASCO COUNTY MAY RESERVE THE RIGHT TO SAMPLE AND TEST ANY MATERIAL UTILIZED IN THE CONSTRUCTION OF THE SUBGRADE. TESTING SHALL BE IN ACCORDANCE WITH THE TESTING SCHEDULE OF THIS MANUAL (ABOVE) AND APPLICABLE FDOT STANDARD SPECIFICATIONS FOR THE ROAD AND BRIDGE CONSTRUCTION (EXCEPT FOR THE REQUIREMENTS OF CQC). INSPECTION OF THE SUBGRADE SHALL BE CONDUCTED BY THE ENGINEER OF RECORD, THE PGMD INSPECTOR, AND SHALL BE APPROVED BY THE PROJECT MANAGER PRIOR TO BASE CONSTRUCTION.

CONTRACTOR SHALL CALL
"SUNSHINE STATE ONE CALL" 1-800-432-4770
A MINIMUM OF 2-DAYS AND
A MAXIMUM OF 5-DAYS PRIOR TO START OF CONSTRUCTION.

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
PROJECT NUMBER 6216-005
DRAWN BY: DBF
SCALE: NTS
PLAN DATE AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 00009660 FL LB 0006816 FL LC 26000202

PREPARED FOR
CWES XXI, LLC

SEAL
DAVID B. FLEEMAN, P.E.
License Number 55362

SHEET TITLE
GENERAL NOTES

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-02

Printed: August 24, 2015 (10:55am EST) by: pcarballo
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SECTION 29, TOWNSHIP 25S, RANGE 20E

LEGAL DESCRIPTION

PARCEL ONE:

THE NORTH 40 ACRES OF THAT PART OF THE SOUTH 1/2 OF THE NORTHWEST 1/4 OF SECTION 29, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA LYING EAST OF THE EXISTING RIGHT-OF-WAY LINE OF PASCO ROAD AS NOW LOCATED; LESS ADDITIONAL RIGHT OF WAY AS SET FORTH IN DEEDS RECORDED IN OFFICIAL RECORDS BOOK 5895, PAGE 1214 AND OFFICIAL RECORDS BOOK 5895, PAGE 1218, OF THE PUBLIC RECORDS OF PASCO COUNTY, FLORIDA.

AND

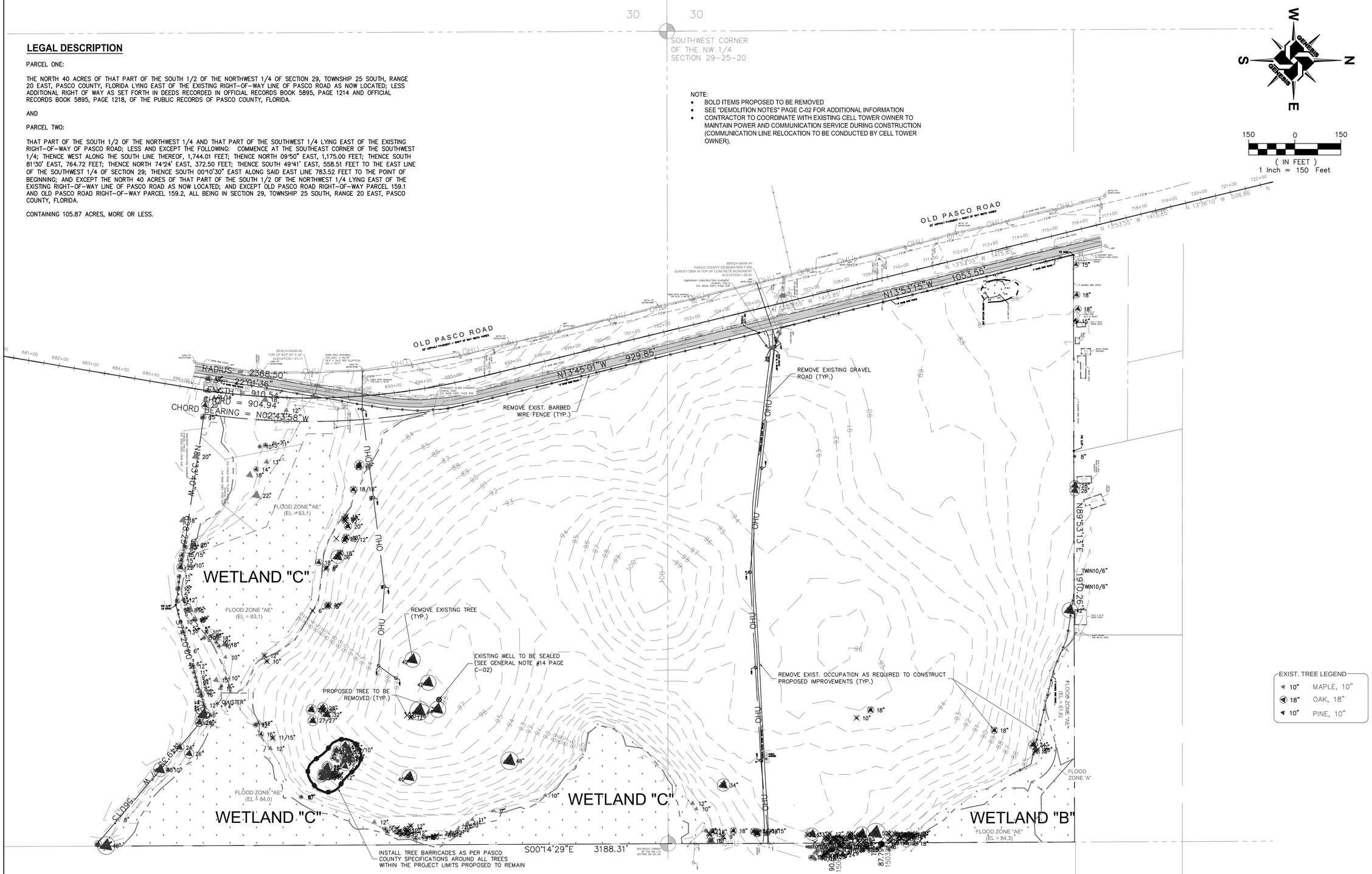
PARCEL TWO:

THAT PART OF THE SOUTH 1/2 OF THE NORTHWEST 1/4 AND THAT PART OF THE SOUTHWEST 1/4 LYING EAST OF THE EXISTING RIGHT-OF-WAY OF PASCO ROAD; LESS AND EXCEPT THE FOLLOWING: COMMENCE AT THE SOUTHEAST CORNER OF THE SOUTHWEST 1/4; THENCE WEST ALONG THE SOUTH LINE THEREOF, 1,744.01 FEET; THENCE NORTH 09°50" EAST, 1,175.00 FEET; THENCE SOUTH 81°30' EAST, 764.72 FEET; THENCE NORTH 74°24' EAST, 372.50 FEET; THENCE SOUTH 49°41' EAST, 558.51 FEET TO THE EAST LINE OF THE SOUTHWEST 1/4 OF SECTION 29; THENCE SOUTH 00°10'30" EAST ALONG SAID EAST LINE 783.52 FEET TO THE POINT OF BEGINNING; AND EXCEPT THE NORTH 40 ACRES OF THAT PART OF THE SOUTH 1/2 OF THE NORTHWEST 1/4 LYING EAST OF THE EXISTING RIGHT-OF-WAY LINE OF PASCO ROAD AS NOW LOCATED; AND EXCEPT OLD PASCO ROAD RIGHT-OF-WAY PARCEL 159.1 AND OLD PASCO ROAD RIGHT-OF-WAY PARCEL 159.2, ALL BEING IN SECTION 29, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA.

CONTAINING 105.87 ACRES, MORE OR LESS.

NOTE:

- BOLD ITEMS PROPOSED TO BE REMOVED
- SEE "DEMOLITION NOTES" PAGE C-02 FOR ADDITIONAL INFORMATION
- CONTRACTOR TO COORDINATE WITH EXISTING CELL TOWER OWNER TO MAINTAIN POWER AND COMMUNICATION SERVICE DURING CONSTRUCTION (COMMUNICATION LINE RELOCATION TO BE CONDUCTED BY CELL TOWER OWNER).



NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY:	DBF	CHECKED BY:	DBF
DRAWN BY:	DBF/PGC	SCALE:	1" = 150'

PROJECT NUMBER 6216-005

PLAN DATE AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000040 FL LB 0000610 FL LC-26000022

PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. FLEEMAN, P.E.
License Number 53362

SHEET TITLE

EXISTING CONDITIONS & DEMOLITION PLAN

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-03

Printed: August 25, 2015 (3:19pm EST) by: dfleeman
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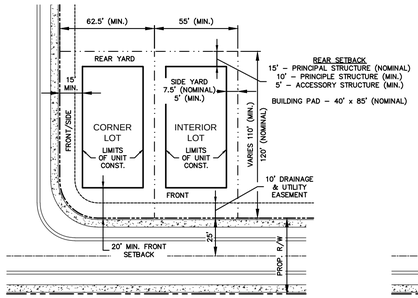
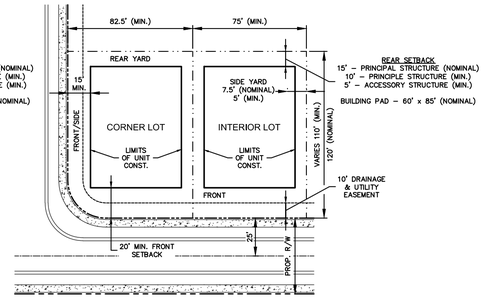


55' LOTS
NTS



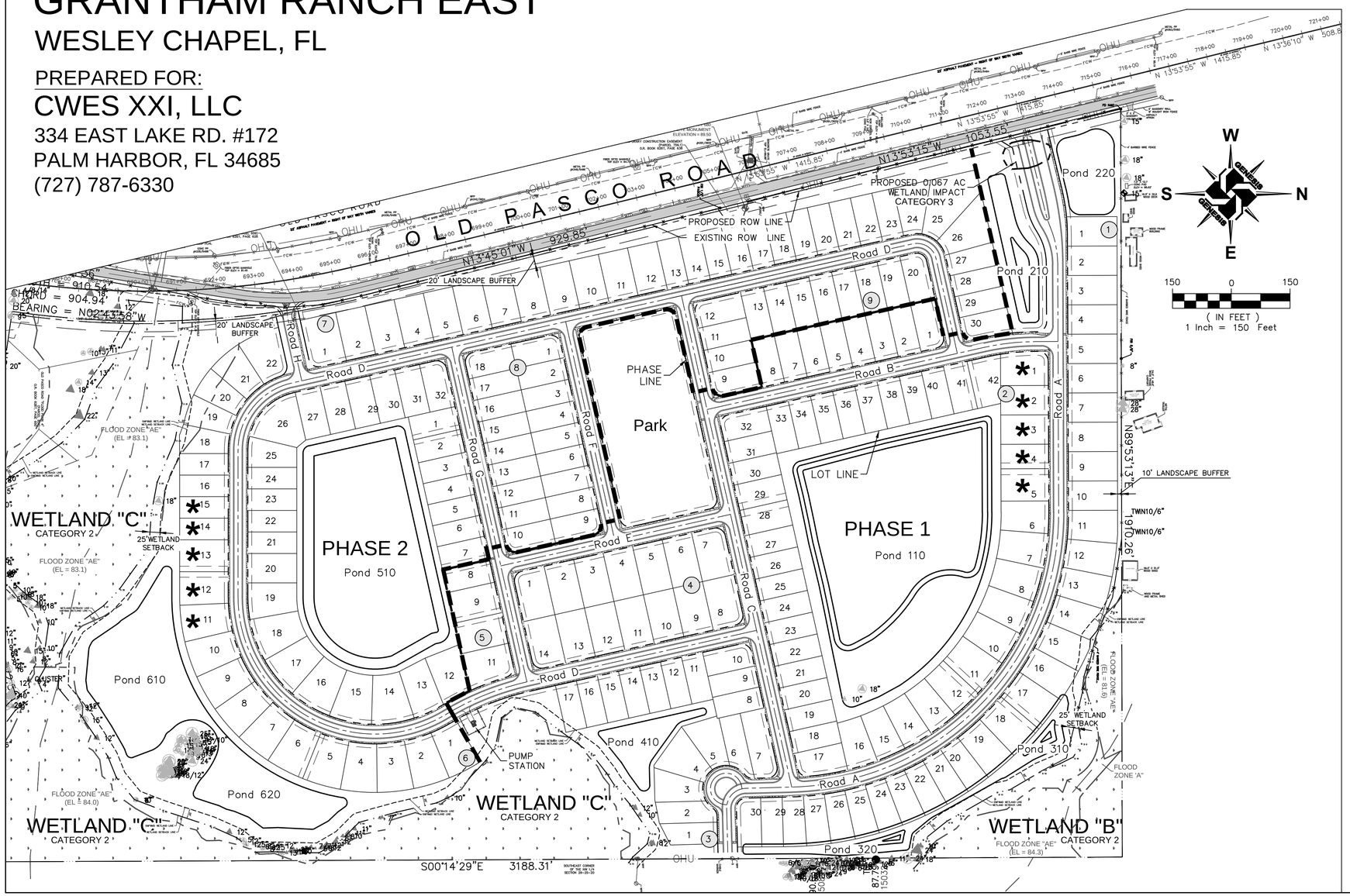
75' LOTS
NTS

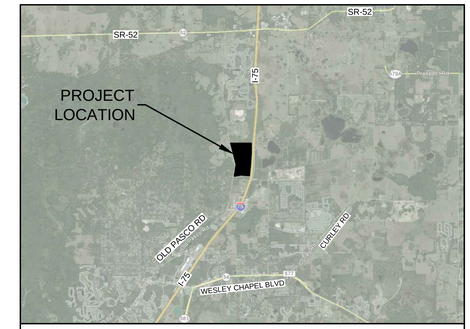
GRANTHAM RANCH EAST

WESLEY CHAPEL, FL

PREPARED FOR:

CWES XXI, LLC
334 EAST LAKE RD. #172
PALM HARBOR, FL 34685
(727) 787-6330

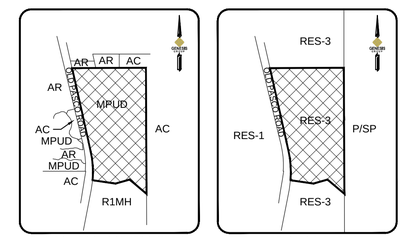




SECTION 29 TOWNSHIP 25S RANGE 20E

LOCATION MAP

NTS



EXISTING ZONING MAP — LAND USE MAP

SITE DATA

PARCEL ID: 29-25-20-0000-00600-0070
29-25-20-0000-00600-0000

ACREAGE: 105.87 AC
WETLANDS: 16.58 AC (PRE) 16.51 (POST)
UPLANDS: 89.29 AC (PRE) 89.36 (POST)

ZONING:
EXISTING: MPUD

LAND USE CLASSIFICATION
EXISTING: RESIDENTIAL-3 DU/GA

PROPOSED RESIDENTIAL GROSS DENSITY:
225 UNITS / 105.87 AC = 2.13 DU/AC

MAX. ALLOWABLE UNITS PER MPUD ZONING: 269 UNITS

MAXIMUM BUILDING HEIGHT: 35 FEET

MAXIMUM LOT COVERAGE: 75 PERCENT (PRINCIPAL + ACCESSORY)

MINIMUM LOT AREA: 5,500 SQUARE FEET

PARK REQUIREMENT: (225 UNITS):
1.0 ACRE + (225–100)*(0.01)ACRE = 2.25 Acres
AREA PROVIDED = 3.02 Acres

LEGEND:
75' LOT
55' LOT
BLOCK NUMBER #
LOT NUMBER #
MODEL CENTER *

	55' LOT	75' LOT	TOTAL
PHASE I	69	46	115
PHASE II	76	34	110
TOTAL	145	80	225

NOTES

1. CONSTRUCTION IS PROPOSED TO BE PHASED (2 PHASES) AND EACH PHASE WILL CUMULATIVELY MEET THE REQUIREMENTS FOR PARKS, OPEN SPACE, STORMWATER, AND EMERGENCY ACCESS.
2. OPEN SPACE MAY INCLUDE, BUT NOT LIMITED TO WETLANDS, LANDSCAPE AREAS, NEIGHBORHOOD PARK AND STORMWATER MANAGEMENT AREAS.
3. PROJECT WATER AND SANITARY SEWER TO BE PROVIDED BY PASCO COUNTY UTILITIES. WATER – EX. 12" PVC (ADJACENT TO SITE – OLD PASCO RD.) SANITARY – PROP. 12" PVC FM (EXTENDED FOR HIGH SCHOOL GGC.)
4. ELECTRICAL SERVICE TO BE PROVIDED BY WITHLACOOCHEE RIVER ELECTRIC COOPERATIVE, INC.
5. BASED ON PASCO COUNTY RECORDS, NO HISTORICAL RESOURCES OR SITES HAVE BEEN IDENTIFIED WITHIN DEVELOPMENT.
6. PENDING DEVELOPMENT IN ACCORDANCE WITH THIS PLAN, INTERIM AGRICULTURAL USES ARE PERMITTED TO CONTINUE.
7. COMMON AREAS (INCLUDING PARKS, STORMWATER FACILITIES, AND WETLANDS) TO BE OWNED AND MAINTAINED BY PROPERTY OWNERS ASSOCIATION. ALL ROADWAYS TO BE OWNED AND MAINTAINED BY PASCO COUNTY.
8. SITE WAS REZONED TO MPUD (P5, PDD15–7112) ON JANUARY 27, 2015.

LEGAL DESCRIPTION

PARCEL ONE:

THE NORTH 40 ACRES OF THAT PART OF THE SOUTH 1/2 OF THE NORTHWEST 1/4 OF SECTION 29, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA LYING EAST OF THE EXISTING RIGHT-OF-WAY LINE OF PASCO ROAD AS NOW LOCATED; LESS ADDITIONAL RIGHT OF WAY AS SET FORTH IN DEEDS RECORDED IN OFFICIAL RECORDS BOOK 5895, PAGE 1214 AND OFFICIAL RECORDS BOOK 5895, PAGE 1218, OF THE PUBLIC RECORDS OF PASCO COUNTY, FLORIDA.

AND

PARCEL TWO:

THAT PART OF THE SOUTH 1/2 OF THE NORTHWEST 1/4 AND THAT PART OF THE SOUTHWEST 1/4 LYING EAST OF THE EXISTING RIGHT-OF-WAY OF PASCO ROAD; LESS AND EXCEPT THE FOLLOWING: COMMENCE AT THE SOUTHEAST CORNER OF THE SOUTHWEST 1/4; THENCE WEST ALONG THE SOUTH LINE THEREOF, 1,744.01 FEET; THENCE NORTH 09°50" EAST, 1,175.00 FEET; THENCE SOUTH 81°30' EAST, 764.72 FEET; THENCE NORTH 74°24' EAST, 372.50 FEET; THENCE SOUTH 49°41' EAST, 558.51 FEET TO THE EAST LINE OF THE SOUTHWEST 1/4 OF SECTION 29; THENCE SOUTH 00°10'30" EAST ALONG SAID EAST LINE 783.52 FEET TO THE POINT OF BEGINNING; AND EXCEPT THE NORTH 40 ACRES OF THAT PART OF THE SOUTH 1/2 OF THE NORTHWEST 1/4 LYING EAST OF THE EXISTING RIGHT-OF-WAY LINE OF PASCO ROAD AS NOW LOCATED; AND EXCEPT OLD PASCO ROAD RIGHT-OF-WAY PARCEL 159.1 AND OLD PASCO ROAD RIGHT-OF-WAY PARCEL 159.2, ALL BEING IN SECTION 29, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA.

CONTAINING 105.873 ACRES, MORE OR LESS.

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF	CHECKED BY: DBF	PROJECT NUMBER 6216-005	
DRAWN BY: DBF/PGC	SCALE: 1" = 150'	PLAN DATE AUG 2015	

GENESIS
FROM VISION TO REALITY
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Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA-0000802 FL LC-26000602

PREPARED FOR
CWES XXI, LLC

SEAL
DAVID B. FLEEMAN, P.E.
License Number 53,562

SHEET TITLE
PRELIMINARY DEVELOPMENT PLAN

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-04

Printed: August 24, 2015 (10:56am EST) by: pcorbalo
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LINE & CURVE TABLE

Road A

Number	Radius	Length	Line/Chord Direction	Start	End
L1		286.86	N76° 21' 37.26"E	N 1435975.31 E 548500.89	N 1436042.96 E 548779.66
C1	250.00	39.22	N71° 51' 56.36"E	N 1436042.96 E 548779.66	N 1436055.15 E 548816.90
C2	250.00	97.81	N78° 34' 45.23"E	N 1436055.15 E 548816.90	N 1436074.40 E 548912.16
L2		632.65	N89° 47' 15.00"E	N 1436074.40 E 548912.16	N 1436076.74 E 549544.81
C3	700.00	1083.62	S45° 51' 53.32"E	N 1436076.74 E 549544.81	N 1435395.28 E 550247.16
L15		117.57	S1° 31' 01.65"E	N 1435395.28 E 550247.16	N 1435277.76 E 550250.27
C10	50.00	78.54	S46° 31' 01.65"E	N 1435277.76 E 550250.27	N 1435229.10 E 550301.58
L16		111.90	N88° 28' 58.35"E	N 1435229.10 E 550301.58	N 1435232.06 E 550413.44

Road B

Number	Radius	Length	Line/Chord Direction	Start	End
L4		58.26	N0° 12' 45.00"W	N 1436016.87 E 549109.46	N 1436075.13 E 549109.25
C4	600.00	130.14	N6° 25' 35.13"W	N 1435887.79 E 549124.00	N 1436016.87 E 549109.46
L3		726.36	N12° 38' 25.25"W	N 1435179.04 E 549282.95	N 1435887.79 E 549124.00

Road C

Number	Radius	Length	Line/Chord Direction	Start	End
L5		1286.16	N77° 21' 34.75"E	N 1435113.83 E 548992.17	N 1435395.28 E 550247.16

Road D

Number	Radius	Length	Line/Chord Direction	Start	End
L9		248.00	N77° 21' 34.75"E	N 1435763.90 E 548897.63	N 1435818.17 E 549139.61
C8	50.00	78.54	N32° 21' 34.75"E	N 1435704.17 E 548859.78	N 1435763.90 E 548897.63
L8		1625.01	N12° 38' 25.25"W	N 1434118.54 E 549215.38	N 1435704.17 E 548859.78
C7	175.00	236.28	N51° 19' 12.63"W	N 1433981.83 E 549386.14	N 1434118.54 E 549215.38
L7		375.57	N90° 00' 00.00"W	N 1433981.83 E 549761.71	N 1433981.83 E 549386.14
C6	350.00	739.60	S29° 27' 46.88"W	N 1434512.48 E 550061.48	N 1433981.83 E 549761.71
C5	700.00	225.21	S21° 51' 25.75"E	N 1434720.60 E 549978.00	N 1434512.48 E 550061.48
L6		599.43	S12° 38' 25.25"E	N 1435305.50 E 549846.83	N 1434720.60 E 549978.00

Road E

Number	Radius	Length	Line/Chord Direction	Start	End
L10		601.00	N12° 38' 25.25"W	N 1434652.64 E 549682.16	N 1435239.08 E 549550.65

Road F

Number	Radius	Length	Line/Chord Direction	Start	End
L11		572.35	N77° 21' 34.75"E	N 1434818.17 E 549058.48	N 1434943.42 E 549616.95

Road G

Number	Radius	Length	Line/Chord Direction	Start	End
L12		875.89	N77° 21' 34.75"E	N 1434527.40 E 549123.69	N 1434719.07 E 549978.35

Road H

Number	Radius	Length	Line/Chord Direction	Start	End
L13		149.14	N77° 21' 34.75"E	N 1434111.78 E 549064.06	N 1434144.42 E 549209.58
C9	275.00	35.69	N81° 04' 38.85"E	N 1434106.25 E 549028.82	N 1434111.78 E 549064.06
L14		42.96	N84° 47' 42.95"E	N 1434102.35 E 548986.04	N 1434106.25 E 549028.82

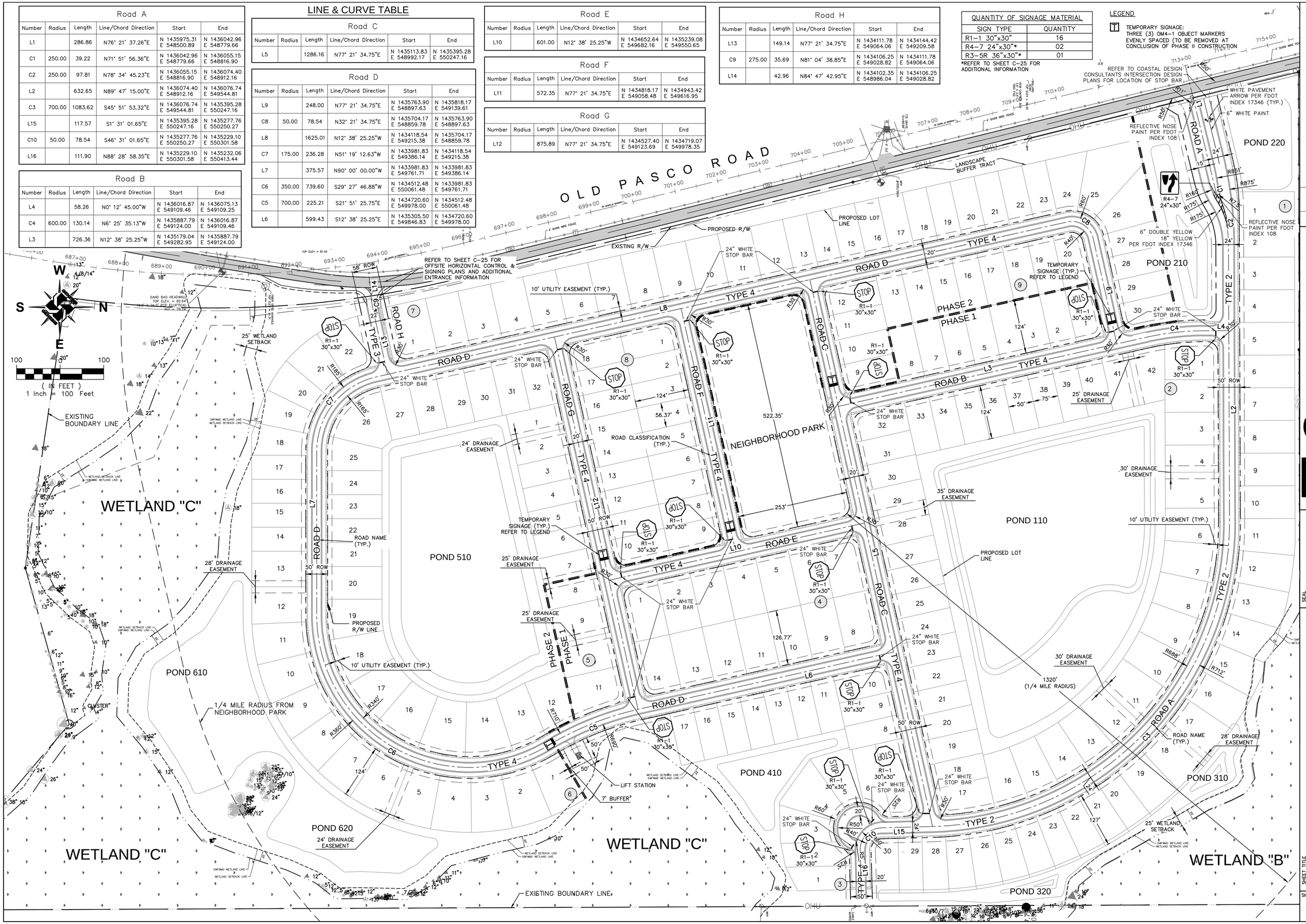
QUANTITY OF SIGNAGE MATERIAL

SIGN TYPE	QUANTITY
R1-1 30"x30"	16
R4-7 24"x30"*	02
R3-5R 36"x30"*	01

*REFER TO SHEET C-25 FOR ADDITIONAL INFORMATION

LEGEND

T TEMPORARY SIGNAGE: THREE (3) OM4-1 OBJECT MARKERS EVENLY SPACED (TO BE REMOVED AT CONCLUSION OF PHASE II CONSTRUCTION



NO.	DATE	DESCRIPTION	REVISIONS

DESIGNED BY: DBF
DRAWN BY: DBF/PGC
CHECKED BY: DBF
SCALE: 1" = 100'
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
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PREPARED FOR
CWES XXI, LLC

SEAL
DAVID B. FLEEMAN, P.E.
License Number 53362

SHEET TITLE
HORIZONTAL CONTROL & SIGNING PLAN

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-05

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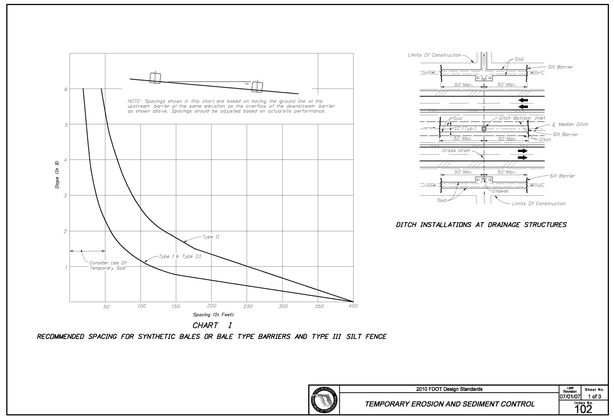
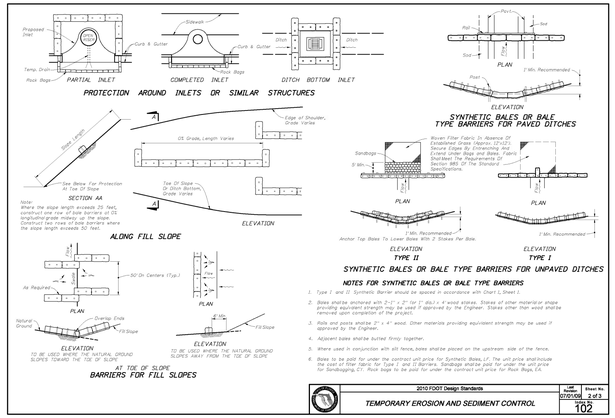
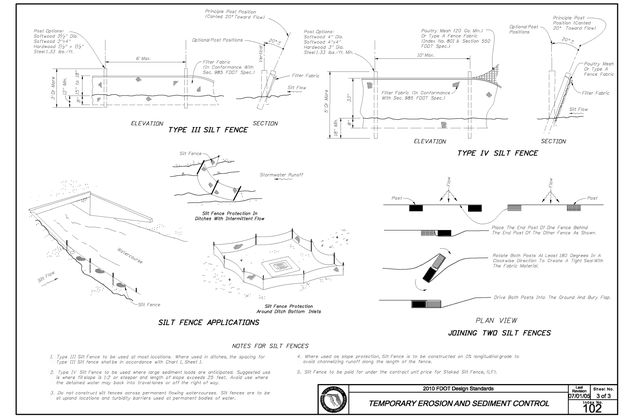
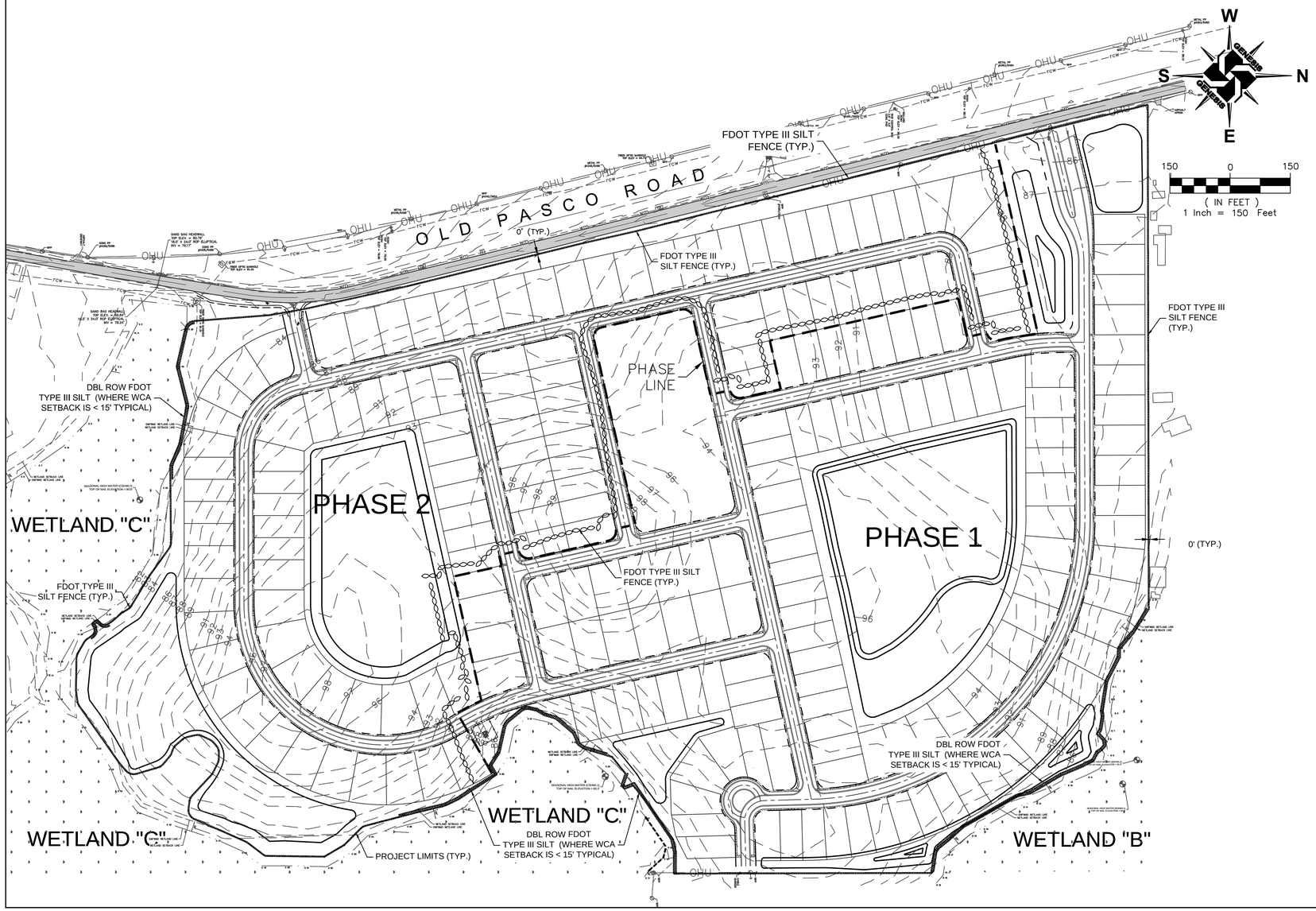
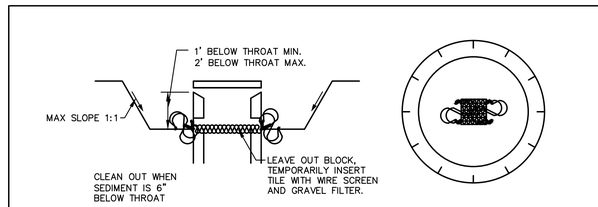
SECTION 29 TOWNSHIP 25S RANGE 20E

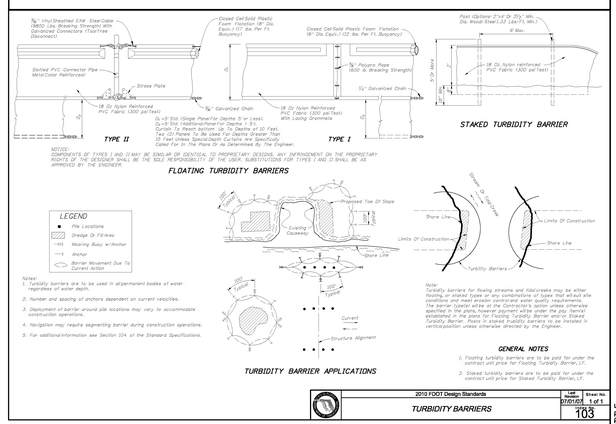












NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY:	DBF	CHECKED BY:	DBF
DRAWN BY:	DBF/PGC	SCALE:	1"=150'

PROJECT NUMBER 6216-005
PLAN DATE AUG 2015

GENESIS
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PREPARED FOR
CWES XXI, LLC

SEAL
DAVID B. FLEEMAN, P.E.
License Number 55362

SHEET TITLE
EROSION CONTROL PLAN

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-06

Printed: August 24, 2015 (10:57am EST) by: pcarballo
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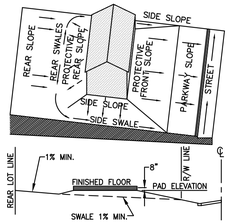
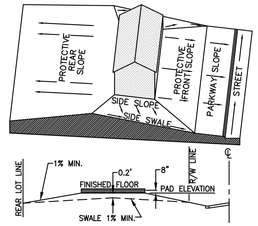


LOT GRADING TYPE "A"

ALL DRAINAGE TO STREET

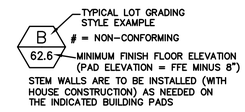


LOT GRADING TYPE "B"

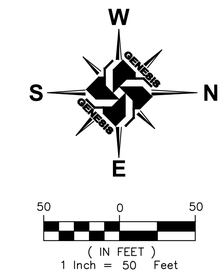
DRAINAGE BOTH TO STREET AND TO REAR LOT LINE

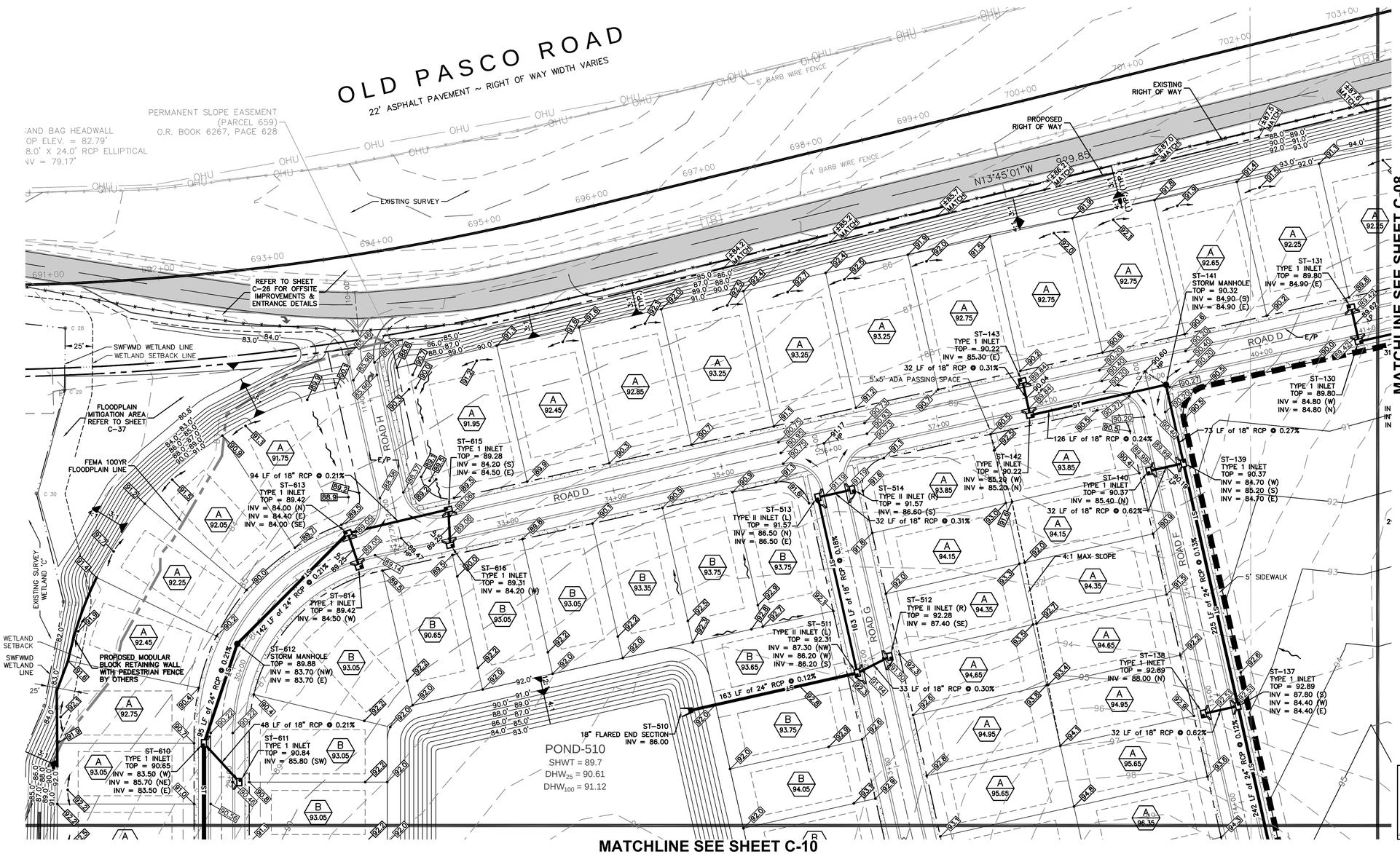
TYPICAL LOT GRADING DETAILS

NTS



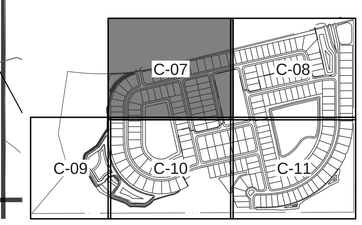
TYPICAL LOT STYLE LEGEND





SIDEWALK NOTES:

1. ALL CONCRETE SIDEWALKS LOCATED ADJACENT TO COMMON AREAS (HOA OWNED) SHALL BE CONSTRUCTED BY SITE CONTRACTOR. SIDEWALK SHALL BE 6-INCHES THICK 3,000 PSI FIBER REINFORCED NATURAL COLOR CONCRETE.
2. ALL CONCRETE SIDEWALK LOCATED ADJACENT TO RESIDENTIAL LOTS TO BE 4 INCHES THICK (MINIMUM) AND INSTALLED BY HOMEOWNER AT TIME OF HOME CONSTRUCTION.
3. 5' X 5' ADA COMPLIANT PASSING SPACES ARE REQUIRED EVERY 200 FT. PASSING SPACE SHALL BE: AN INTERSECTION MEETING REQUIREMENTS OF SECTION 403.513 FLORIDA ACCESSIBILITY CODE, A DRIVEWAY CROSSING COMPLYING WITH DETAIL ON SHEET C-37, OR A 5' X 5' SECTION OF SIDEWALK.
4. ALL SIDEWALK CURB RAMPS SHALL COMPLY WITH FDOT STANDARD INDEX.



NO.	DATE	DESCRIPTION	REVISIONS

DESIGNED BY: DBF	CHECKED BY: DBF	PROJECT NUMBER 6216-005	
DRAWN BY: DBF/PGC	SCALE: 1" = 50'	PLAN DATE AUG 2015	

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PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. FIEDMAN, P.E.
License Number 53,362

SHEET TITLE

LOT GRADING PLAN

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-07

Printed: August 24, 2015 (10:58am EST) by: pcarbalo
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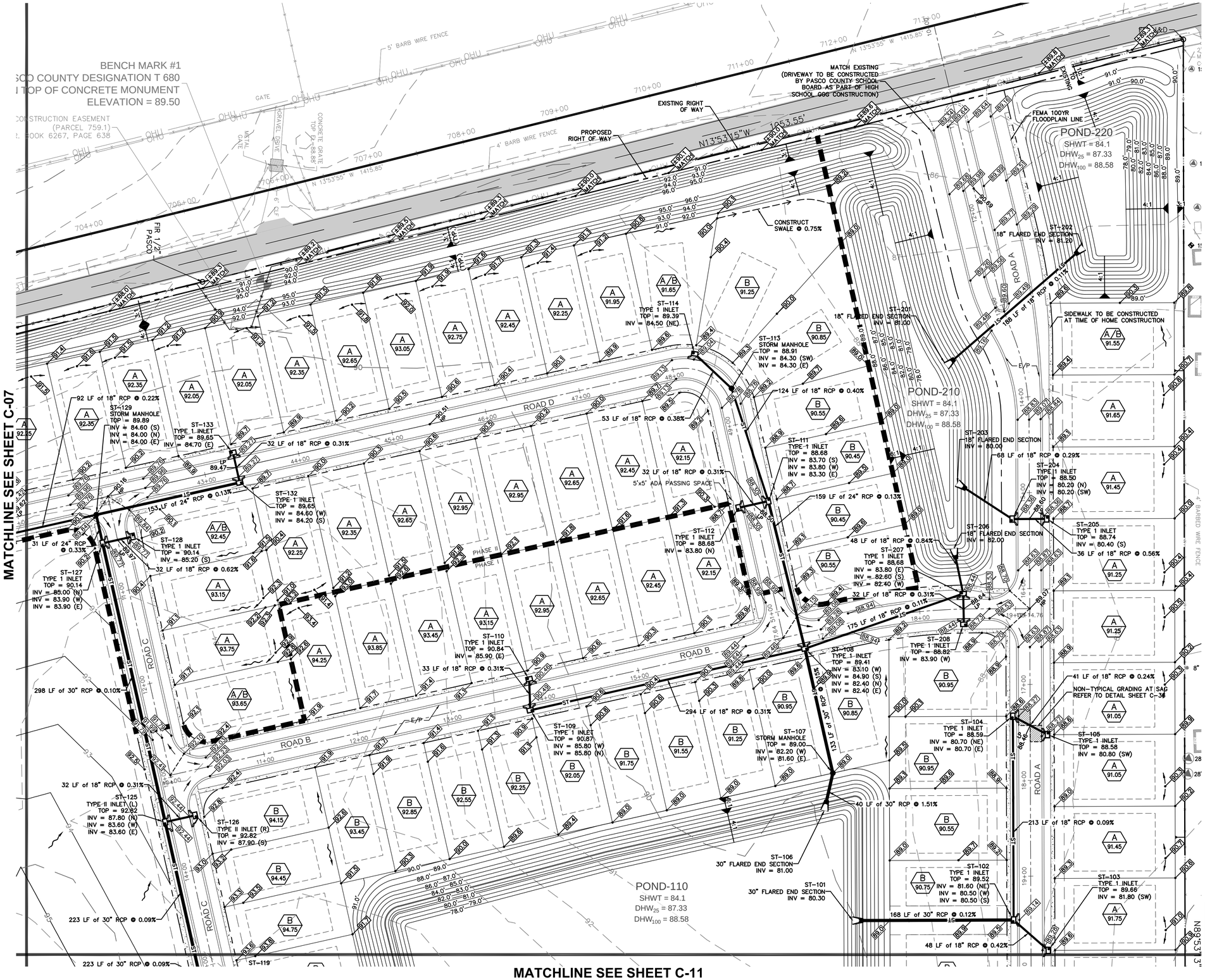

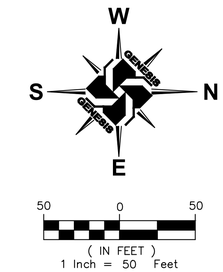

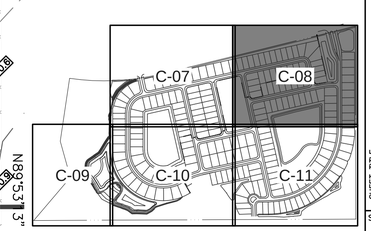

NO.	DATE	DESCRIPTION	REVISIONS

DESIGNED BY:	DBF	CHECKED BY:	DBF
DRAWN BY:	DBF/PGC	SCALE:	1" = 50'

PROJECT NUMBER 6216-005
PLAN DATE AUG 2015

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PREPARED FOR
CWES XXI, LLC

SEAL
DAVID B. FILEMAN, P.E.
License Number 65362

SHEET TITLE
LOT GRADING PLAN

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-08

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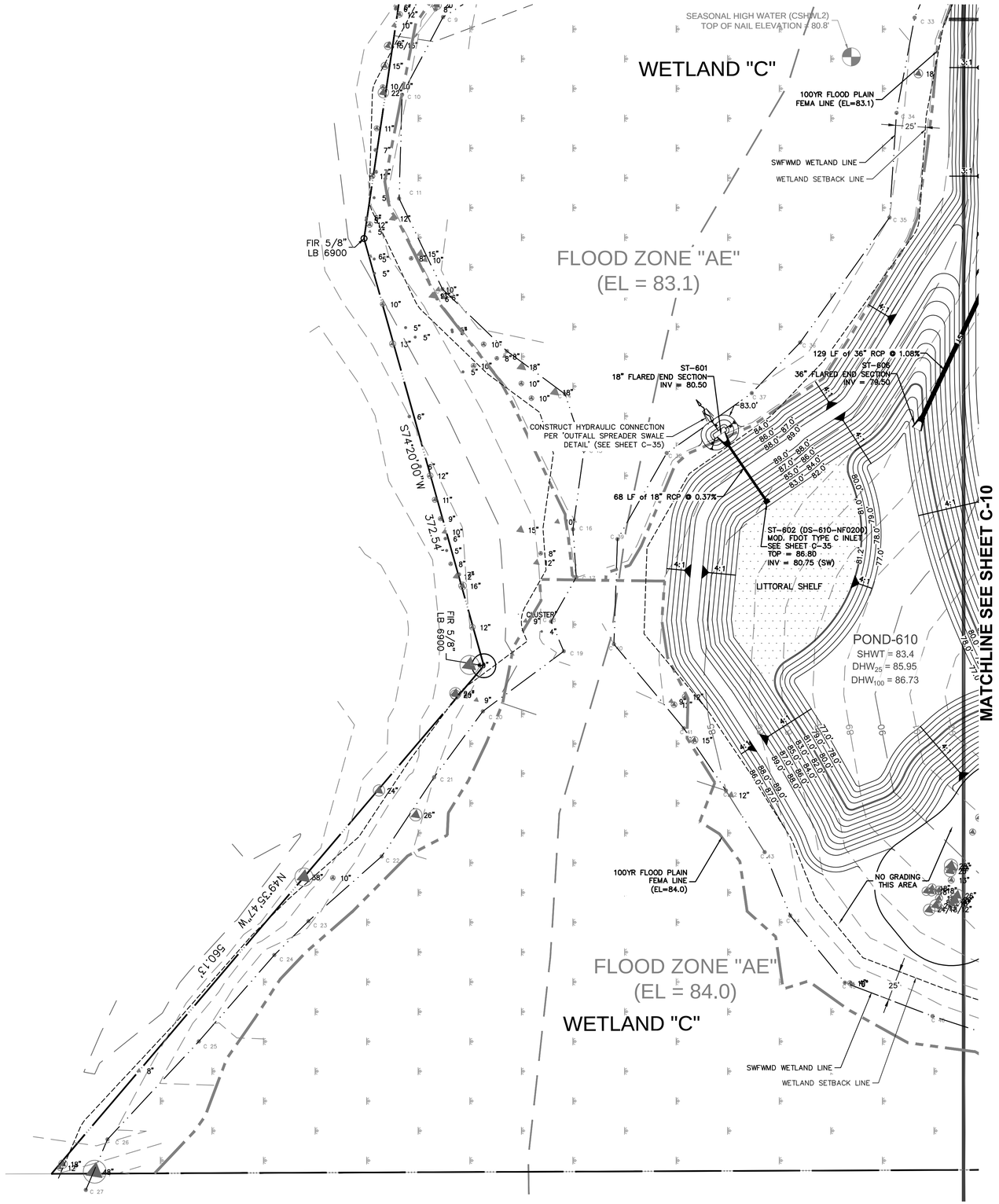

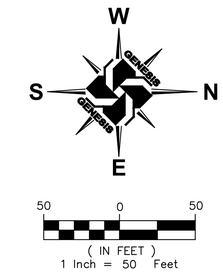

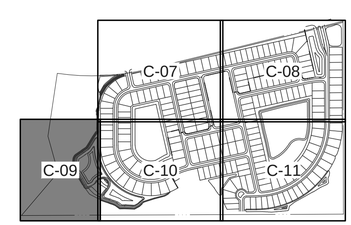

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF	CHECKED BY: DBF	PROJECT NUMBER 6216-005	
DRAWN BY: DBF/PGC	SCALE: 1" = 50'	PLAN DATE AUG 2015	

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3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
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FL CA 0000466 FL LB 0000416 FL LC-26000022

PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. TIEDEMAN, P.E.
License Number 55362

SHEET TITLE

LOT GRADING PLAN

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-09

Printed: August 24, 2015 (10:58am EST) by: pcarbalio
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MATCHLINE SEE SHEET C-07

MATCHLINE SEE SHEET C-09

MATCHLINE SEE SHEET C-11

POND-510
SHWT = 89.7
DHW_{25} = 90.61
DHW_{100} = 91.12

POND-620
SHWT = 83.4
DHW_{25} = 85.99
DHW_{100} = 86.83

POND-410
SHWT = 83.3
DHW_{25} = 88.00
DHW_{100} = 88.44

WETLAND "C"

ST-608 TYPE 1 INLET TOP = 92.25 INV = 83.20 (W) INV = 87.30 (NE) INV = 83.20 (S)
301 LF of 36" RCP @ 0.10%
ST-609 TYPE 1 INLET TOP = 92.27 INV = 87.40 (SW)
133 LF of 36" RCP @ 0.15%
ST-607 STORM MANHOLE TOP = 93.00 INV = 83.00 (N) INV = 80.90 (SE)
43 LF of 18" RCP @ 0.23%
ST-147 (DS-510-110) MOD. FDOT TYPE C INLET SEE SHEET C-35 (phase 2) TOP = 91.20 INV = 86.50 (N)
18 LF of 18" RCP @ 2.78%
ST-146 STORM MANHOLE TOP = 91.50 INV = 86.00 (S) INV = 86.00 (N) INV = 86.00 (E) [BRICK & MORTAR TEMP. PHASE 1 CONNECTION]
137 LF of 18" RCP @ 0.22%
107 LF of 24" RCP @ 0.94%
ST-144 STORM MANHOLE TOP = 93.26 INV = 84.70 (S) INV = 84.70 (N)
ST-145 STORM MANHOLE TOP = 93.75 INV = 85.70 (S) INV = 85.70 (N)
ST-509 TYPE 1 INLET TOP = 93.48 INV = 88.60 (E)
242 LF of 24" RCP @ 0.12%
225 LF of 24" RCP @ 0.27%
5'x5' ADA PASSING SPACE
32 LF of 18" RCP @ 0.31%
ST-508 TYPE 1 INLET TOP = 93.48 INV = 88.50 (W) INV = 88.50 (S)
103 LF of 18" RCP @ 0.20%
ST-136 STORM MANHOLE TOP = 95.48 INV = 84.10 (S) INV = 84.10 (W) INV = 84.10 (N)
ST-507 STORM MANHOLE TOP = 93.68 INV = 88.30 (N) INV = 88.30 (E)
103 LF of 18" RCP @ 0.19%
32 LF of 18" RCP @ 0.31%
ST-503 TYPE 1 INLET TOP = 93.46 INV = 88.50 (S)
5'x5' ADA PASSING SPACE
ST-501 18" FLARED END SECTION INV = 87.50
158 LF of 18" RCP @ 0.38%
ST-502 TYPE 1 INLET TOP = 93.46 INV = 88.40 (N) INV = 88.10 (W) INV = 88.20 (E) INV = 88.10 (S)
172 LF of 18" RCP @ 0.23%
103 LF of 18" RCP @ 0.20%
ST-505 TYPE 1 INLET TOP = 93.88 INV = 88.80 (NE) INV = 88.80 (S)
36 LF of 18" RCP @ 0.28%
ST-504 STORM MANHOLE TOP = 94.11 INV = 88.60 (W) INV = 88.60 (W)
ST-506 TYPE 1 INLET TOP = 93.84 INV = 88.90 (SW)
ST-603 24" FLARED END SECTION INV = 79.00
104 LF of 24" RCP @ 0.00%
ST-604 STORM MANHOLE TOP = 91.11 INV = 79.00 (E) INV = 79.00 (SW)
104 LF of 24" RCP @ 0.00%
ST-605 24" FLARED END SECTION INV = 79.00
NO GRADING IN THIS AREA
ST-621 TYPE 1 INLET TOP = 93.21 INV = 88.20 (NE) INV = 88.20 (S)
ST-619 STORM MANHOLE TOP = 94.24 INV = 87.60 (N) INV = 87.60 (E)
123 LF of 18" RCP @ 0.24%
120 LF of 18" RCP @ 0.25%
ST-622 TYPE 1 INLET TOP = 93.20 INV = 88.30 (SW)
NON-TYPICAL GRADING AT SAG REFER TO DETAIL SHEET C-36
42 LF of 18" RCP @ 0.24%
ST-620 STORM MANHOLE TOP = 93.62 INV = 87.90 (N) INV = 87.90 (S)
142 LF of 18" RCP @ 0.21%
ST-618 STORM MANHOLE TOP = 93.00 INV = 87.30 (W) INV = 82.70 (E)
52 LF of 18" RCP @ 3.27%
ST-617 18" FLARED END SECTION INV = 81.00
PROPOSED PUMP STATION
PROPOSED MODULAR BLOCK RETAINING WALL WITH PEDESTRIAN FENCE BY OTHERS
NYLOPLAST 15" INLINE DRAIN TOP EL=92.00 INV OUT =87.50
40 LF of 12" PP @ 1.25%
ST-402 (DS-410-NF0180) MOD. FDOT TYPE C INLET SEE SHEET C-35 TOP = 88.50 INV = 84.50 (SE)
CONSTRUCT HYDRAULIC CONNECTION PER 'OUTFALL SPREADER SWALE DETAIL' (SEE SHEET C-35)
SEASONAL HIGH WATER (CSHWL1) TOP OF NAIL ELEVATION = 83.3'
ST-401 18" FLARED END SECTION INV = 84.25
40 LF of 18" RCP @ 0.63%
WETLAND SETBACK LINE
SWFWMD WETLAND LINE
S00°14'29"E 3188.31'
SOUTHEAST CORNER OF THE NW 1/4

W S N E

50 0 50
(IN FEET)
1 Inch = 50 Feet

C-07 C-08 C-09 C-10 C-11

NO.	DATE	DESCRIPTION	DESIGNED BY:	DBF	DRAWN BY:	DBF/PGC
		REVISIONS	CHECKED BY:	DBF	SCALE:	1" = 50'
			PROJECT NUMBER	6216-005	PLAN DATE	AUG 2015

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PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. TIEDEMAN, P.E.
License Number 55,362

SHEET TITLE
LOT GRADING PLAN

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-10

Printed: August 24, 2015 (10:58am EST) by: pcarballo
F:\6216\005\CAD.ENG\6216-005_PGD-PLN.DWG

MATCHLINE SEE SHEET C-08

MATCHLINE SEE SHEET C-10

POND-110
SHWT = 84.1
DHW_{25} = 87.33
DHW_{100} = 88.58

NOTE: GEOTECHNICAL REPORT INDICATES SANDY LEAN CLAY MAY BE PRESENT IN POND-110. REFER TO POND-110 CROSS SECTION SHEET C-28 FOR ADDITIONAL INFORMATION.

POND-410
SHWT = 83.3
DHW_{25} = 88.00
DHW_{100} = 88.44

POND-320
SHWT = 84.1
DHW_{25} = 87.38
DHW_{100} = 88.51

POND-310
SHWT = 84.1
DHW_{25} = 87.31
DHW_{100} = 88.51

ROAD A
ROAD C
ROAD E

223 LF of 30" RCP @ 0.09%
33 LF of 30" RCP @ 0.31%
241 LF of 30" RCP @ 0.12%
213 LF of 42" RCP @ 0.94%
48 LF of 18" RCP @ 0.42%
123 LF of 18" RCP @ 0.24%
32 LF of 18" RCP @ 0.62%
32 LF of 18" RCP @ 0.31%
169 LF of 18" RCP @ 0.18%
31 LF of 18" RCP @ 0.33%
32 LF of 18" RCP @ 0.31%
177 LF of 36" RCP @ 0.11%
48 LF of 36" RCP @ 0.21%
155 LF of 36" RCP @ 0.00%
206 LF of 18" RCP @ 0.10%
54 LF of 18" RCP @ 0.46%
209 LF of 18" RCP @ 0.10%
272 LF of 18" RCP @ 0.22%
153 LF of 18" RCP @ 0.20%
148 LF of 18" RCP @ 0.20%
34 LF of 18" RCP @ 0.59%
79 LF of 18" RCP @ 0.25%
32 LF of 18" RCP @ 0.31%

ST-118
42" FLARED END SECTION
INV = 80.00

ST-119
STORM MANHOLE
TOP = 93.55
INV = 87.60 (E)
INV = 83.40 (W)
INV = 83.70 (S)
INV = 82.00 (N)

ST-134
TYPE 1 INLET
TOP = 93.77
INV = 83.80 (S)
INV = 88.60 (E)
INV = 83.80 (N)

ST-135
TYPE 1 INLET
TOP = 93.77
INV = 88.80 (W)

ST-120
TYPE 1 INLET
TOP = 93.29
INV = 88.30 (N)
INV = 87.90 (E)
INV = 87.90 (W)

ST-121
TYPE 1 INLET
TOP = 93.29
INV = 88.40 (S)

ST-122
STORM MANHOLE
TOP = 93.25
INV = 88.20 (S)
INV = 88.20 (W)

ST-123
TYPE 1 INLET
TOP = 93.21
INV = 88.30 (E)
INV = 88.30 (N)

ST-124
TYPE 1 INLET
TOP = 93.21
INV = 88.40 (W)

ST-309
36" FLARED END SECTION
INV = 77.90

ST-308
TYPE 1 INLET
TOP = 89.94
INV = 78.10 (N)
INV = 78.10 (SW)

ST-307
TYPE 1 INLET
TOP = 89.93
INV = 78.20 (S)
INV = 82.00 (NE)

ST-306
36" FLARED END SECTION
INV = 82.00

ST-302 (DS-310-NGI260)
MOD. FDOT TYPE C INLET
SEE SHEET C-35
TOP = 88.60
INV = 82.00 (N)

ST-301
18" FLARED END SECTION
INV = 81.75

ST-303
18" FLARED END SECTION
INV = 82.00

ST-304
FDOT TYPE D INLET
TOP = 86.73
INV = 82.20 (NW)
INV = 82.20 (SE)

ST-305
18" FLARED END SECTION
INV = 82.00

ST-310
18" FLARED END SECTION
INV = 86.00

ST-311
STORM MANHOLE
TOP = 92.18
INV = 86.20 (W)
INV = 85.60 (N)

ST-312
TYPE 1 INLET
TOP = 91.92
INV = 86.60 (NE)
INV = 86.50 (N)
INV = 86.50 (E)

ST-313
TYPE 1 INLET
TOP = 91.73
INV = 86.80 (SW)

ST-314
STORM MANHOLE
TOP = 92.26
INV = 86.80 (W)
INV = 86.80 (S)

ST-315
TYPE 1 INLET
TOP = 92.08
INV = 87.00 (N)
INV = 87.00 (E)

ST-316
TYPE 1 INLET
TOP = 92.08
INV = 87.10 (S)

LITTORAL SHELF

CONSTRUCT SUMP AS SHOWN

NON-TYPICAL GRADING AT SAG REFER TO DETAIL SHEET C-36

PROPOSED MODULAR BLOCK RETAINING WALL WITH PEDESTRIAN FENCE BY OTHERS

100YR FEMA FLOODPLAIN LINE (EL=81.6)

4' BARBED WIRE FENCE

TOE OF SLOPE

FLOOD ZONE "A" (EL = 81.6)

100YR FEMA FLOODPLAIN LINE (EL=84.3)

FLOOD ZONE "AE" (EL = 84.3)

WETLAND "B"

SWFWMD WETLAND LINE

WETLAND SETBACK LINE

SEASONAL HIGH WATER (BSHWL2) TOP OF NAIL ELEVATION = 82.0

SEASONAL HIGH WATER (BSHWL2) TOP OF NAIL ELEVATION = 81.9

CONSTRUCT HYDRAULIC CONNECTION PER 'OUTFALL SPREADER SWALE DETAIL' (SEE SHEET C-35)

CONSTRUCT 'REAR YARD SWALE' AS PER DETAIL (THIS SHEET)

5'x5' ADA PASSING SPACE

E/P

W
S
N
E

50 0 50
(IN FEET)
1 Inch = 50 Feet

REAR LOT LINE
REAR LOT GRADE
3:1 MAX SLOPE TO EXISTING
4:1
18"
6'
MIN BOTT. WIDTH
MIN TOP WIDTH

REAR YARD SWALE DETAIL
(LOTS 1 TO 3, BLOCK 3)

C-07 C-08 C-09 C-10 C-11

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: 1" = 50'
PLAN DATE: AUG 2015
PROJECT NUMBER: 6216-005

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000040 FL LB 0000615 FL LC-26000022

PREPARED FOR

SEAL

DAVID B. TIEDMAN, P.E.
License Number 55,362

SHEET TITLE
LOT GRADING PLAN

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-11

Printed: August 24, 2015 (10:58am EST) by: pcarbalio
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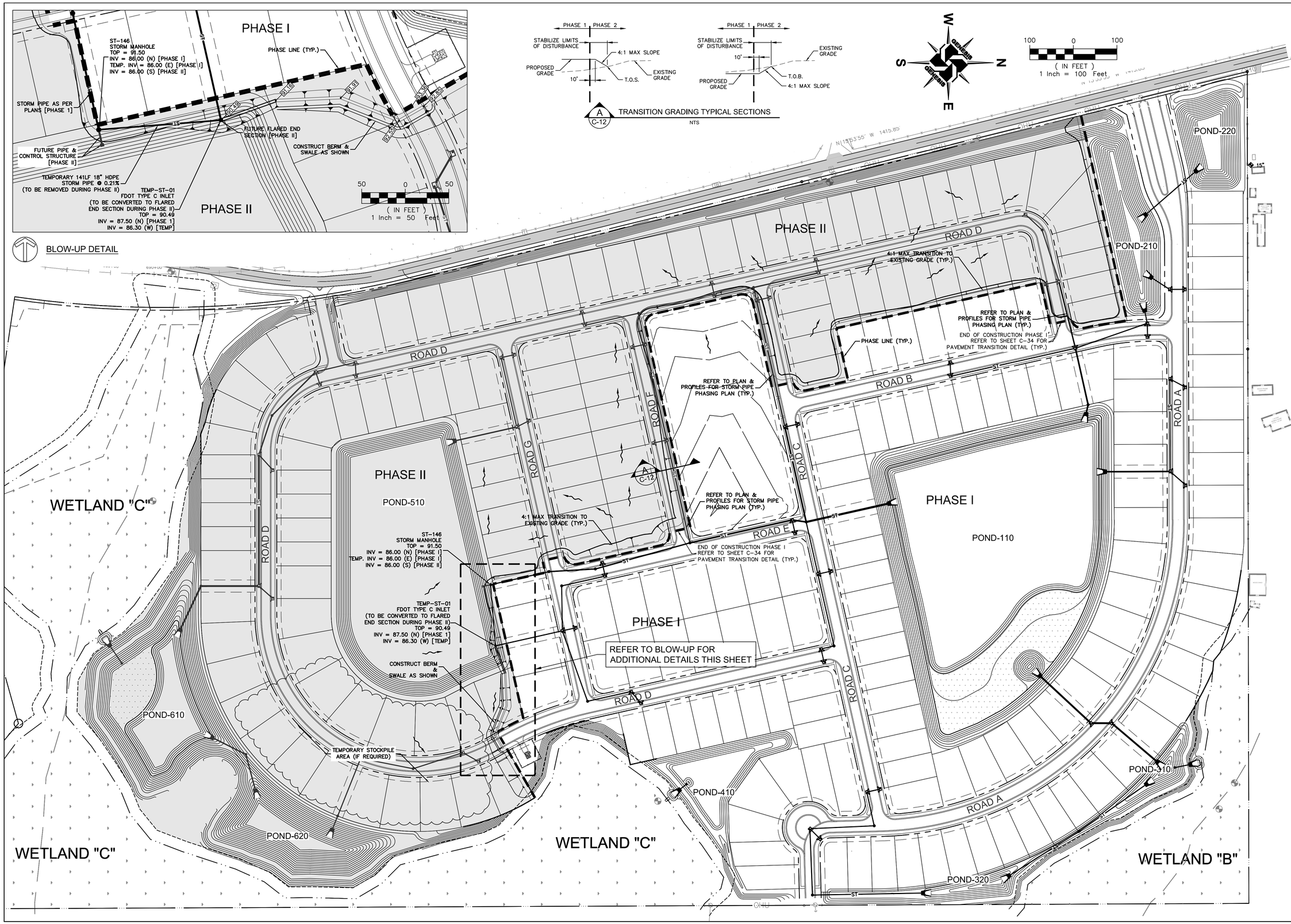

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: 1" = 100'
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA-0000600 FL LB-0000615 FL LC-26000022

PREPARED FOR:

CWES XXI, LLC

SEAL

DAVID B. FIEDMAN, P.E.
License Number 55362

SHEET TITLE

PHASE 1 TRANSITION GRADING

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-12

Printed: August 24, 2015 (10:59am EST) by: pcarbalo
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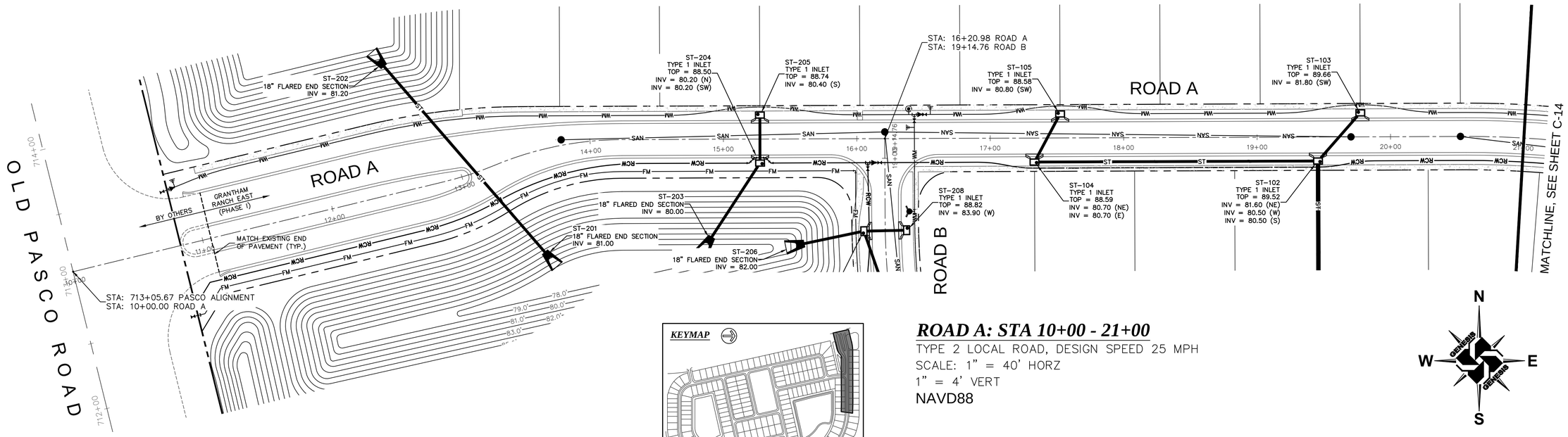
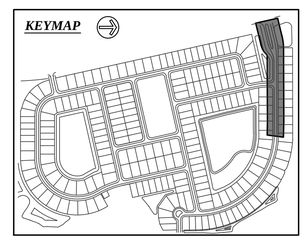
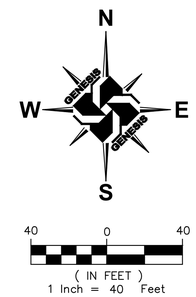




ROAD A: STA 10+00 - 21+00

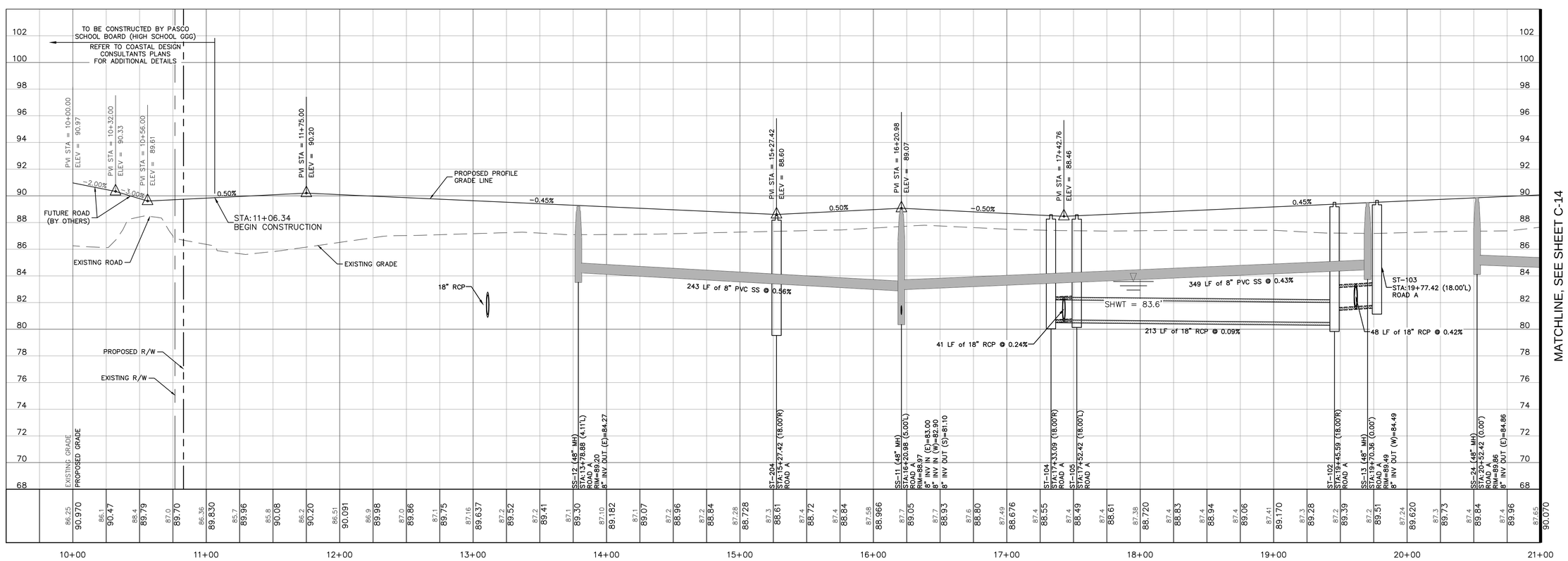
TYPE 2 LOCAL ROAD, DESIGN SPEED 25 MPH
SCALE: 1" = 40' HORZ
1" = 4' VERT
NAVD88



NOTE:

COASTAL DESIGN CONSULTANTS 'HIGH SCHOOL GGG' CONSTRUCTION PLANS REFERENCE NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD29)

NAVD88 = NGVD29 - 0.82



Printed: August 24, 2015 (11:31am EST) by: pcorbalio
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NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY:	DBF	CHECKED BY:	DBF
DRAWN BY:	DBF/PGC	SCALE:	1" = 40'

PROJECT NUMBER 6216-005
PLAN DATE AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000402 FL LB 0000416 FL LC-26000022

PREPARED FOR

CWES XXI, LLC

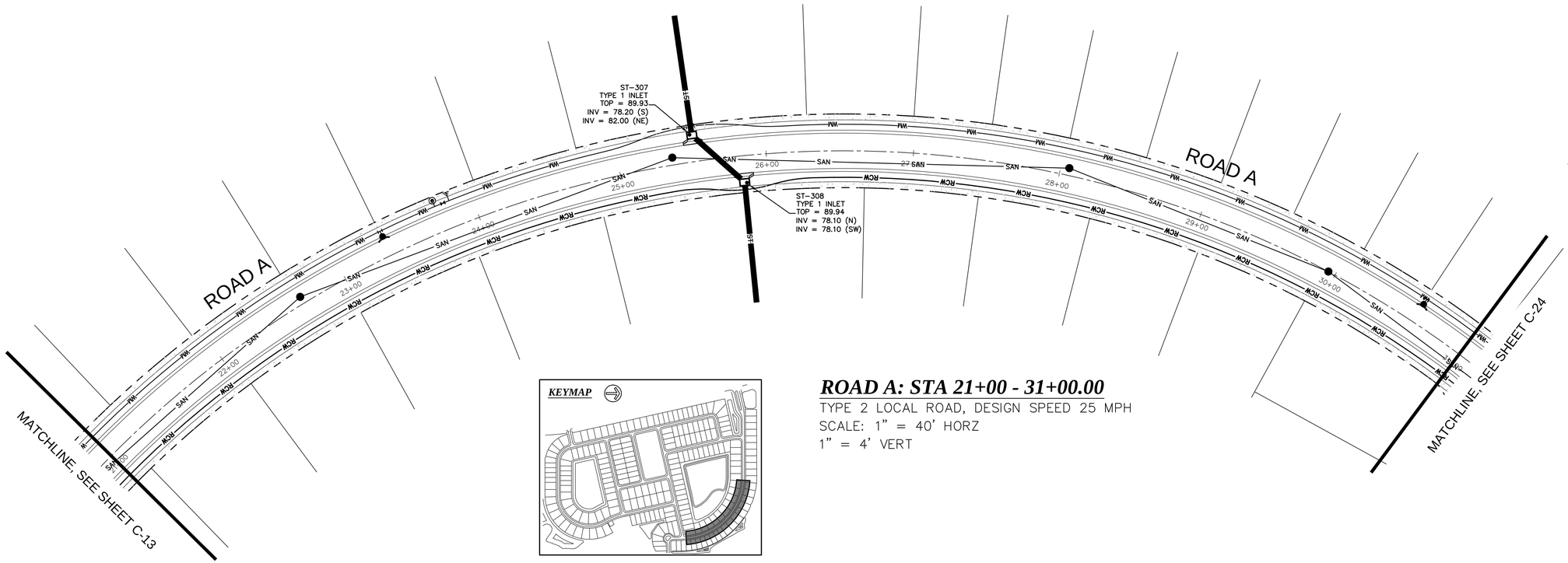
SEAL

DAVID B. TIEDEMAN, P.E.
License Number 55,562

SHEET TITLE
ROAD A PLAN & PROFILE

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-13



ROAD A: STA 21+00 - 31+00.00

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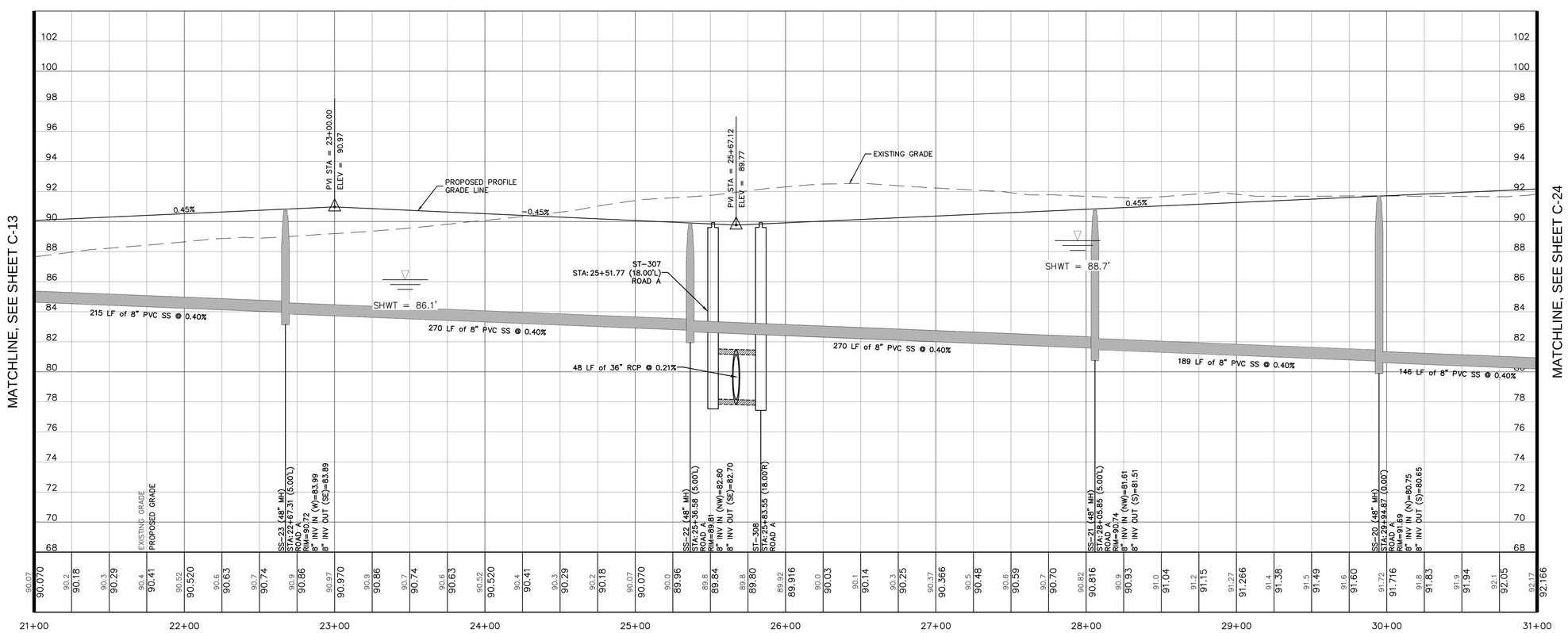
SCALE: 1" = 40' HORZ
1" = 4' VERT



NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: 1" = 40'
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
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PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. TIEFMAN, P.E.
License Number 55,562

SHEET TITLE

ROAD A PLAN & PROFILE

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-14

Printed: August 24, 2015 (11:31am EST) by: pcorbalio
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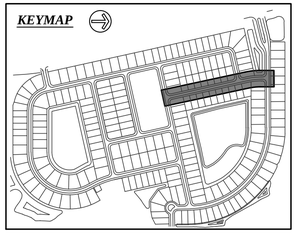
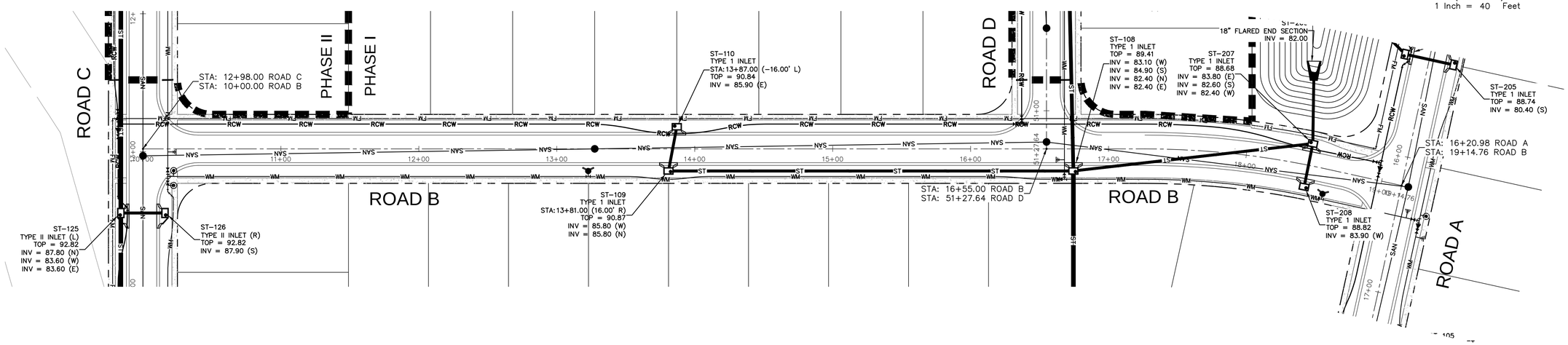
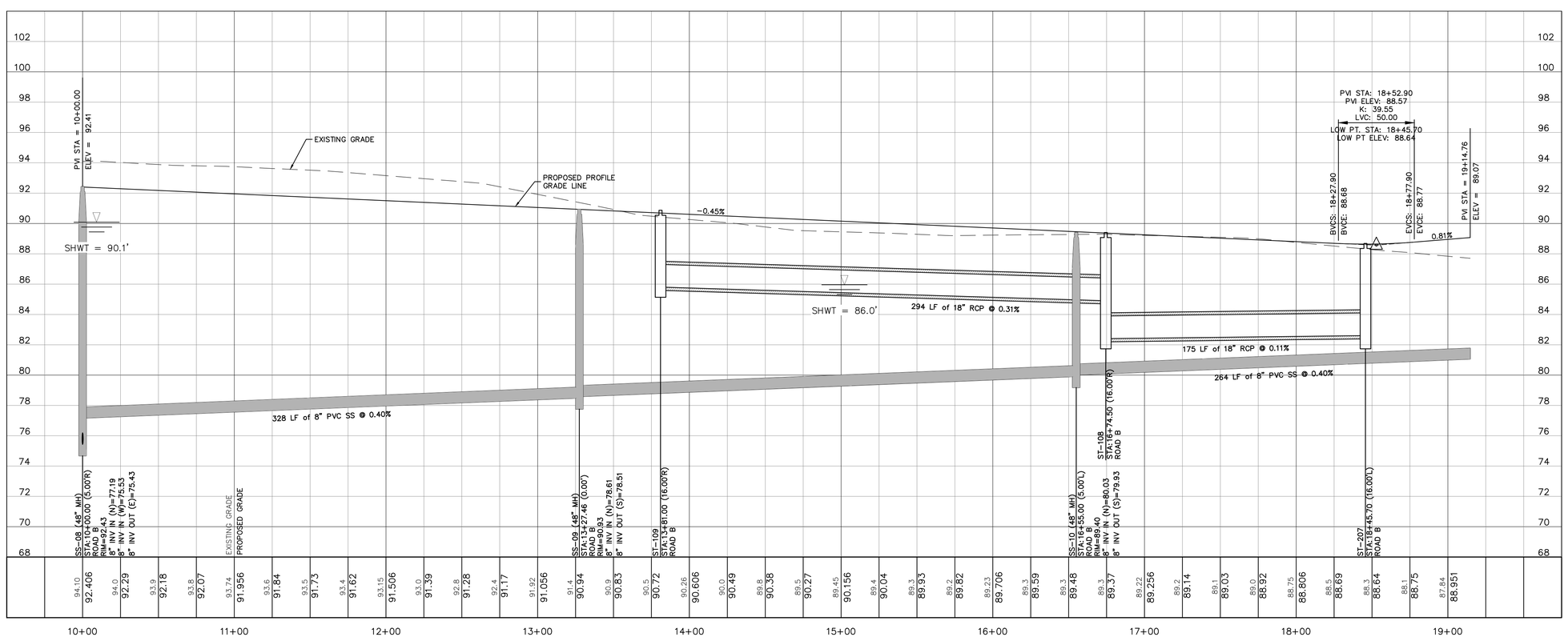


ROAD B: STA 10+00 - 19+14.76

TYPE 4 LOCAL ROAD, DESIGN SPEED 15 MPH
SCALE: 1" = 40' HORZ
1" = 4' VERT





NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: 1" = 40'
PROJECT NUMBER 6216-005
PLAN DATE AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000466 FL LC-26000602

PREPARED FOR

CWES XXI, LLC

SEAL

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License Number 55362

SHEET TITLE
ROAD B PLAN & PROFILE

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-15

Printed: August 24, 2015 (11:31am EST) by: pcorbalio
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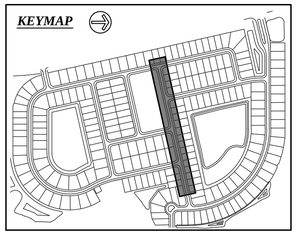
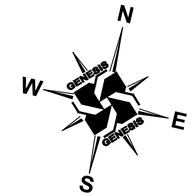
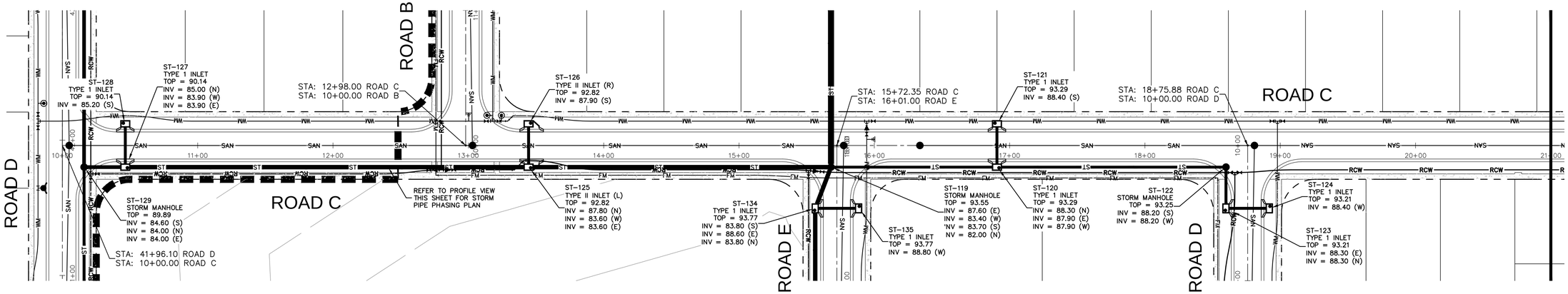
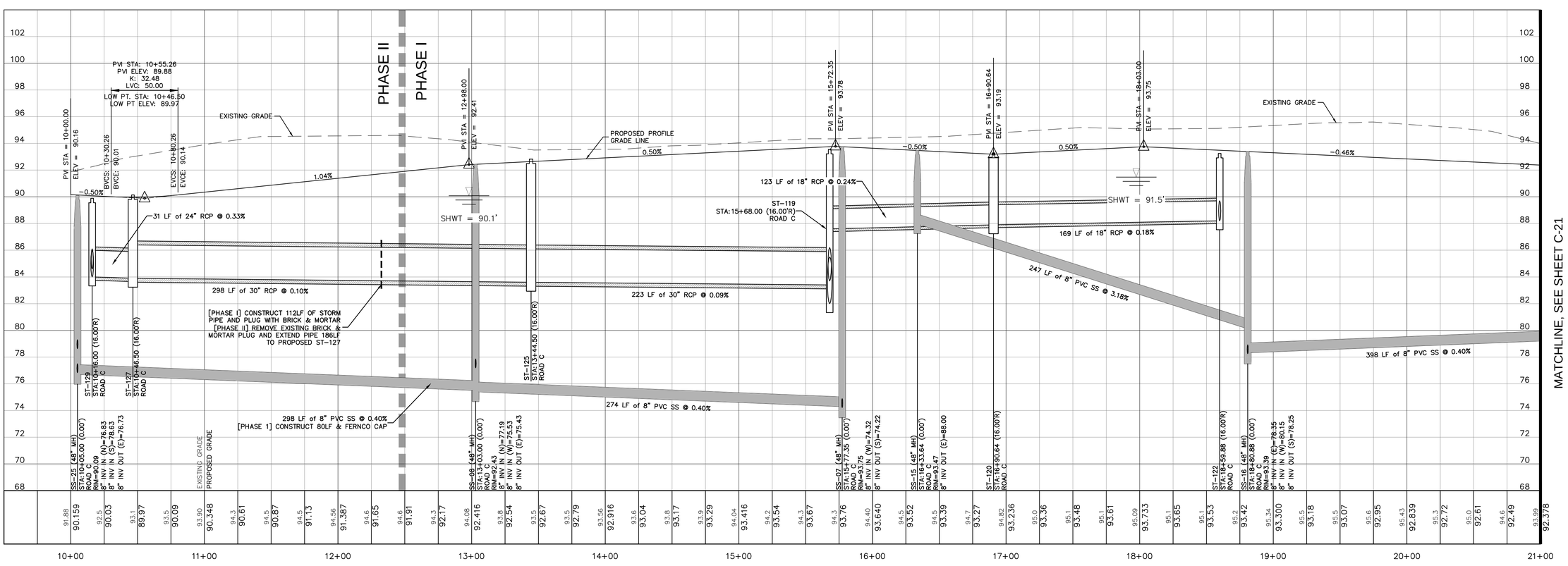
ROAD C: STA 10+00 - 21+00

(CONTINUED ON SHEET C-21)
TYPE 4 LOCAL ROAD, DESIGN SPEED 15 MPH
SCALE: 1" = 40' HORZ
1" = 4' VERT









MATCHLINE, SEE SHEET C-21

MATCHLINE, SEE SHEET C-21

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: 1" = 40'
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
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PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. TIEDEMAN, P.E.
License Number 55362

SHEET TITLE
ROAD C PLAN & PROFILE

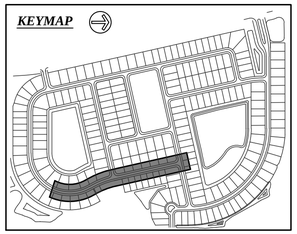
PROJECT NAME
GRANTHAM RANCH EAST

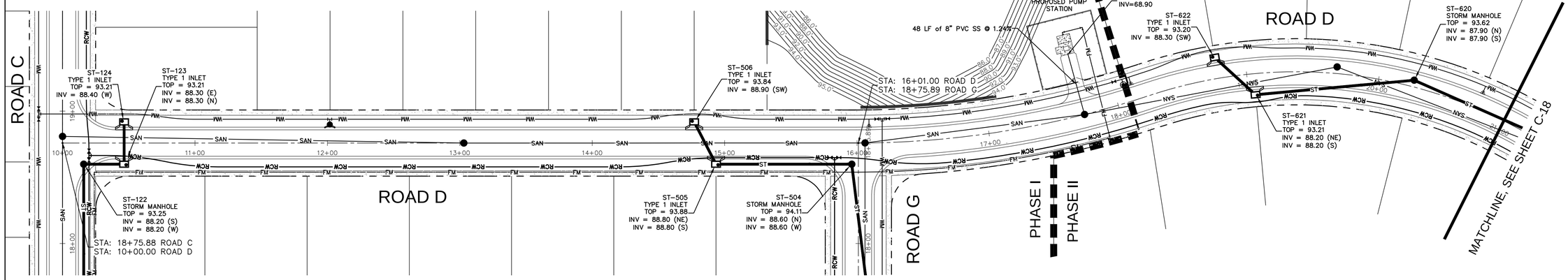
SHEET NUMBER
C-16

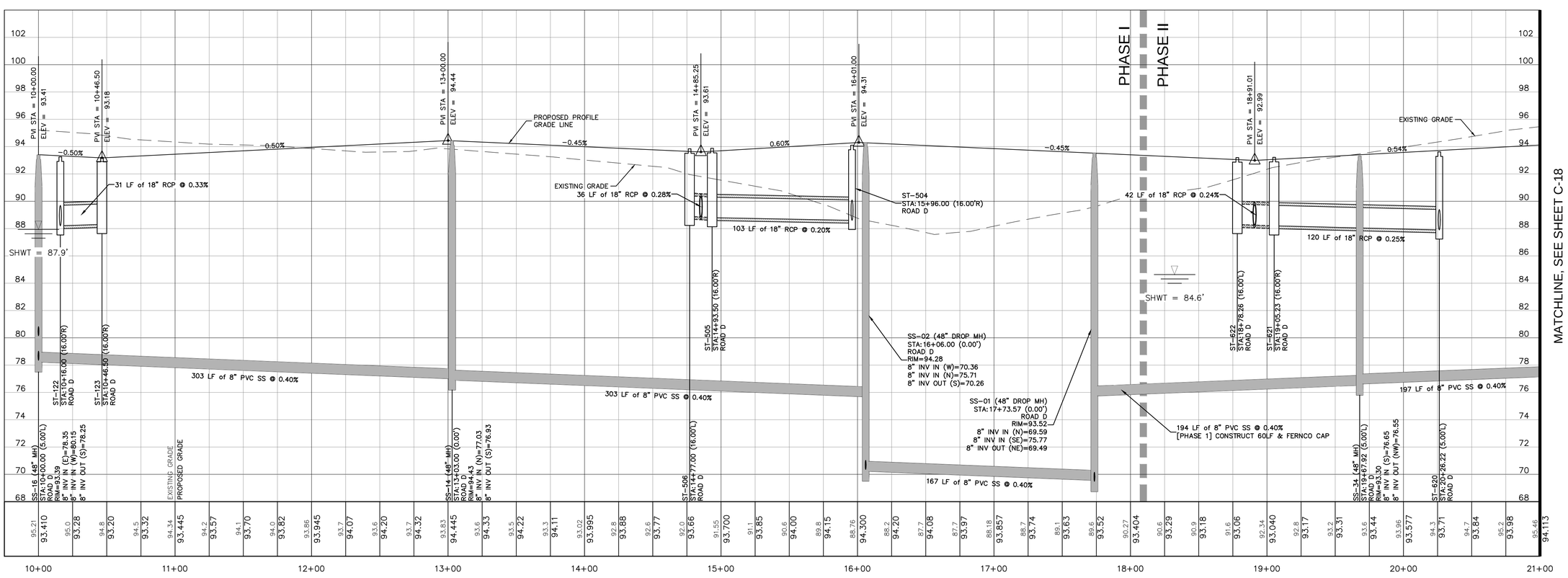
Printed: August 24, 2015 (11:31am EST) by: pcorbalis
F:\6216\005\CAD\ENG\6216-005_PLN-PROF.DWG

ROAD D: STA 10+00 - 21+00

TYPE 4 LOCAL ROAD, DESIGN SPEED 15 MPH
SCALE: 1" = 40' HORZ
1" = 4' VERT







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Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000466 FL LB 0000610 FL LC-26000602

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF	CHECKED BY: DBF	PROJECT NUMBER 6216-005	
DRAWN BY: DBF/PGC	SCALE: 1" = 40'	PLAN DATE AUG 2015	

PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. FLEEMAN, P.E.
License Number 55362

SHEET TITLE

ROAD D PLAN & PROFILE

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-17

Printed: August 24, 2015 (11:31am EST) by: pcarballo
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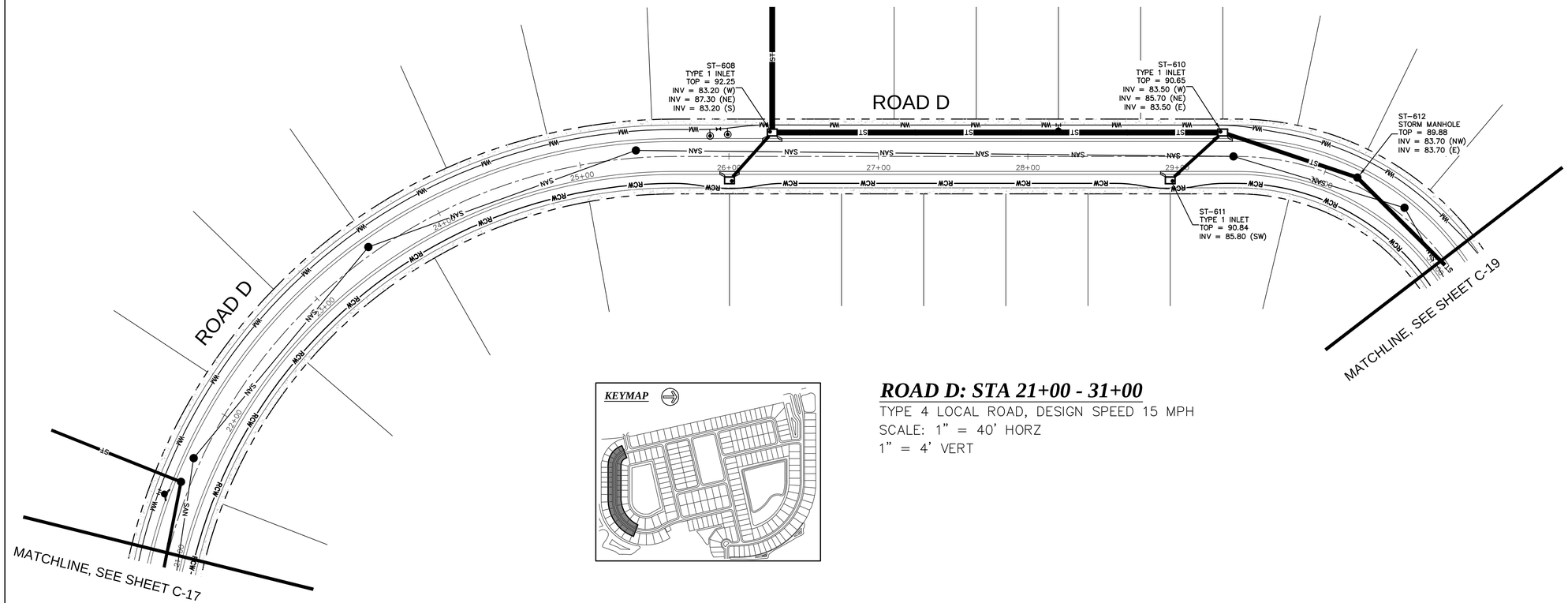
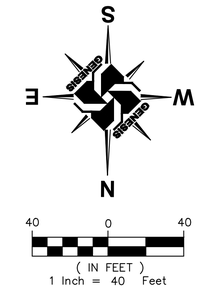
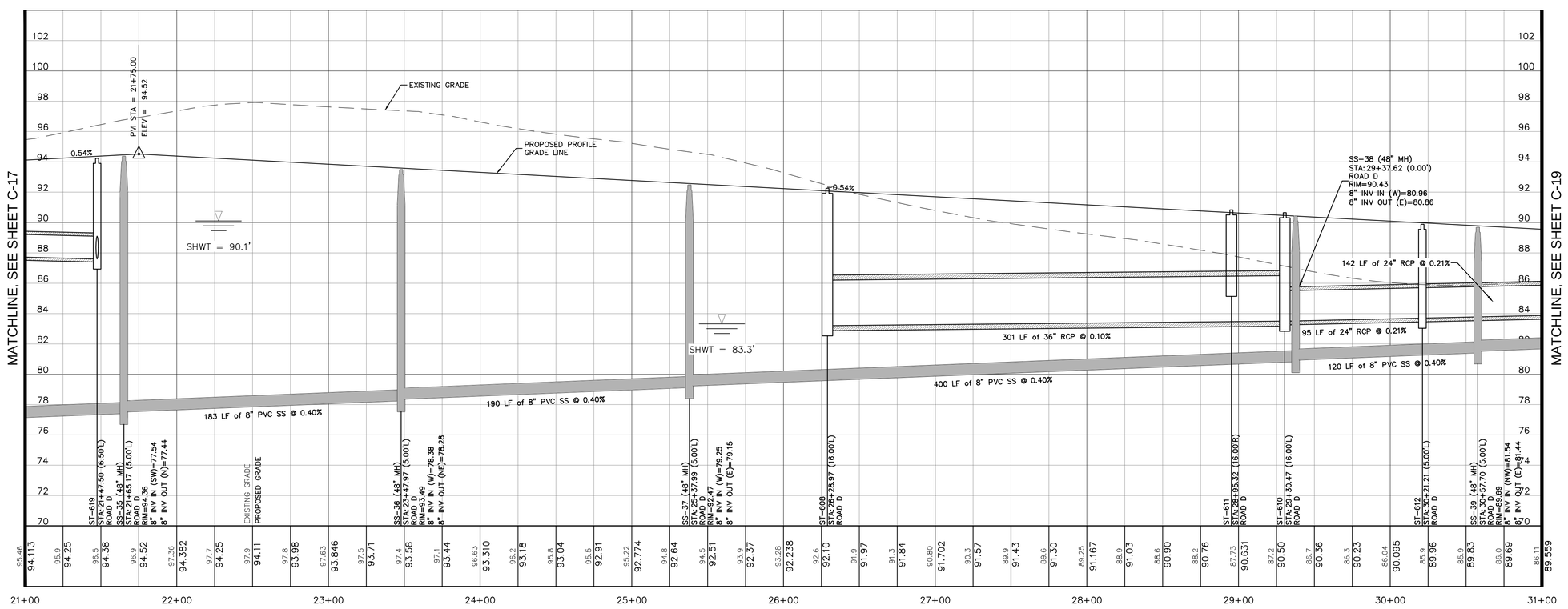




ROAD D: STA 21+00 - 31+00

TYPE 4 LOCAL ROAD, DESIGN SPEED 15 MPH
SCALE: 1" = 40' HORZ
1" = 4' VERT



NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY:	DBF	CHECKED BY:	DBF
DRAWN BY:	DBF/PGC	SCALE:	1" = 40'

PROJECT NUMBER 6216-005
PLAN DATE AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000466 FL LB 0000416 FL LC-26000002

PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. TIEDEMAN, P.E.
License Number 55,562

SHEET TITLE
ROAD D PLAN & PROFILE

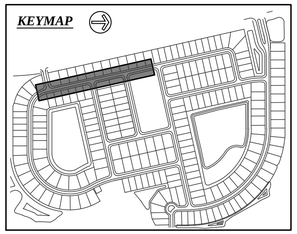
PROJECT NAME
GRANTHAM RANCH EAST

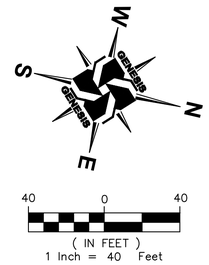
SHEET NUMBER
C-18

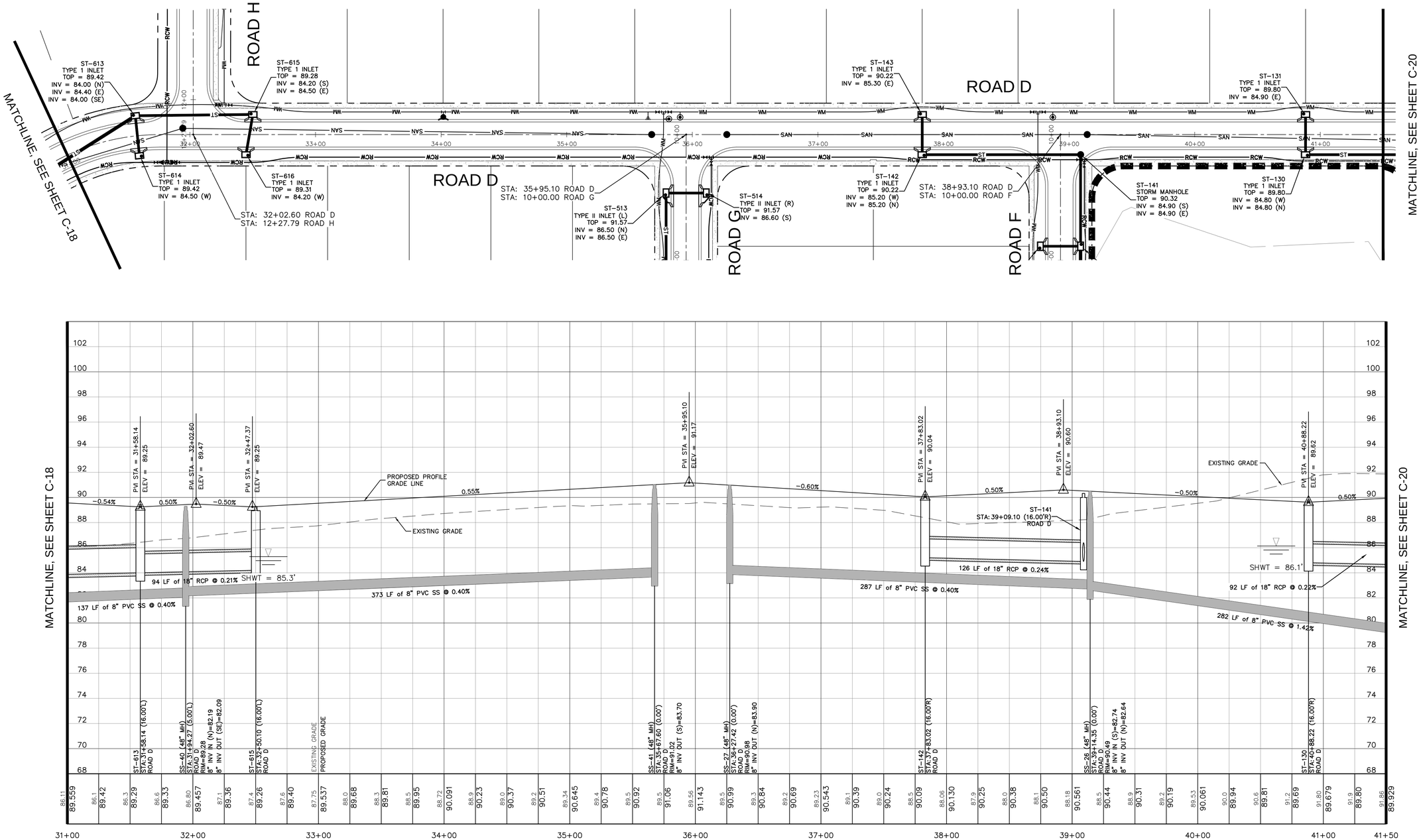
Printed: August 24, 2015 (11:32am EST) by: pcarballo
F:\6216\005\CAD.ENG\6216-005_PLN-PROF.DWG

ROAD D: STA 31+00 - 41+50

TYPE 4 LOCAL ROAD, DESIGN SPEED 15 MPH
SCALE: 1" = 40' HORZ
1" = 4' VERT







NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: 1" = 40'
PROJECT NUMBER 6216-005
PLAN DATE AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000466 FL LB 0000610 FL LC-26000022

PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. TIEDMAN, P.E.
License Number 55362

SHEET TITLE

ROAD D PLAN & PROFILE

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-19

Printed: August 24, 2015 (11:32am EST) by: pcarballo
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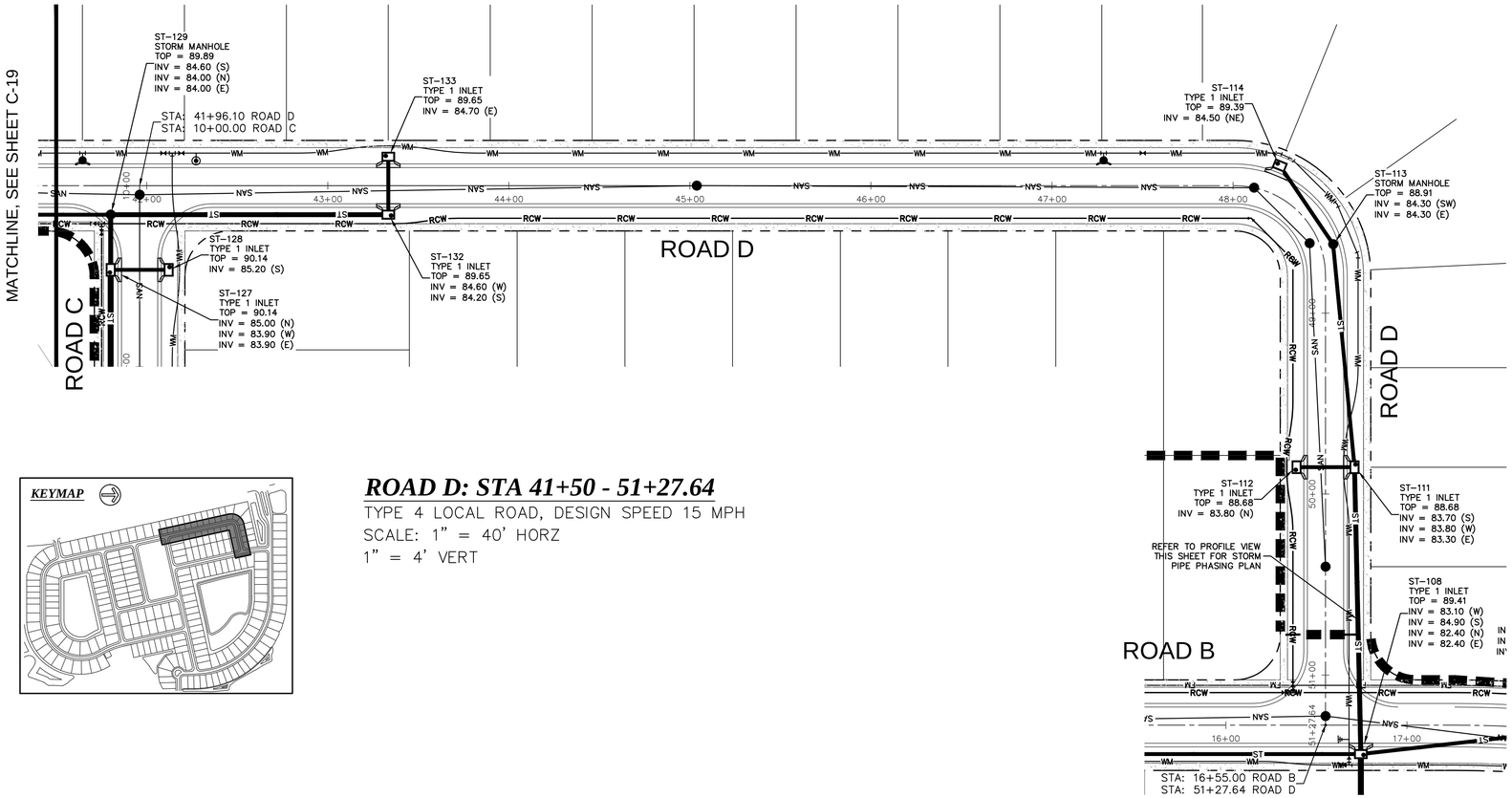
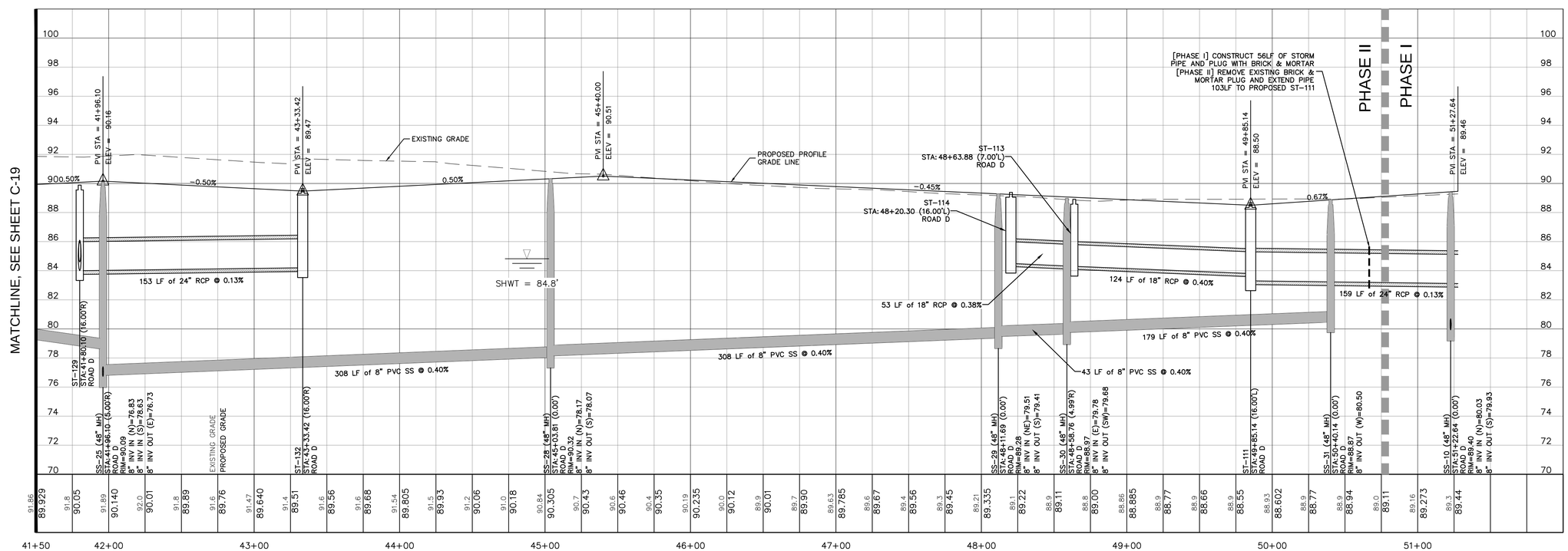


ROAD D: STA 41+50 - 51+27.64

TYPE 4 LOCAL ROAD, DESIGN SPEED 15 MPH
SCALE: 1" = 40' HORZ
1" = 4' VERT



NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: 1" = 40'
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000466 FL LB 0000616 FL LC-26000022

PREPARED FOR:

CWES XXI, LLC

SEAL

DAVID R. FLEEMAN, P.E.
License Number 65362

SHEET TITLE

ROAD D PLAN & PROFILE

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-20

Printed: August 24, 2015 (11:32am EST) by: pcarbello
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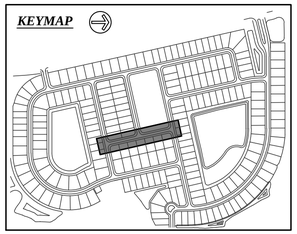
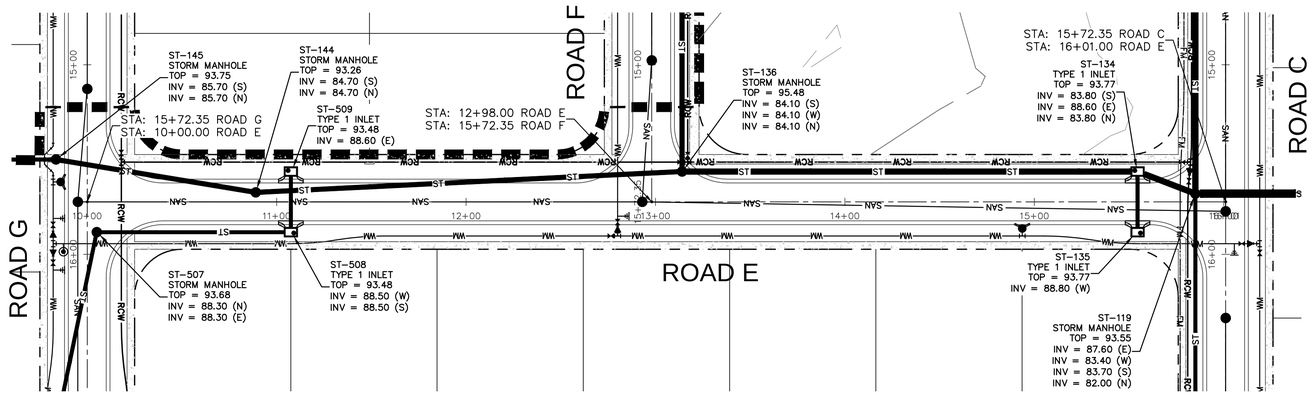
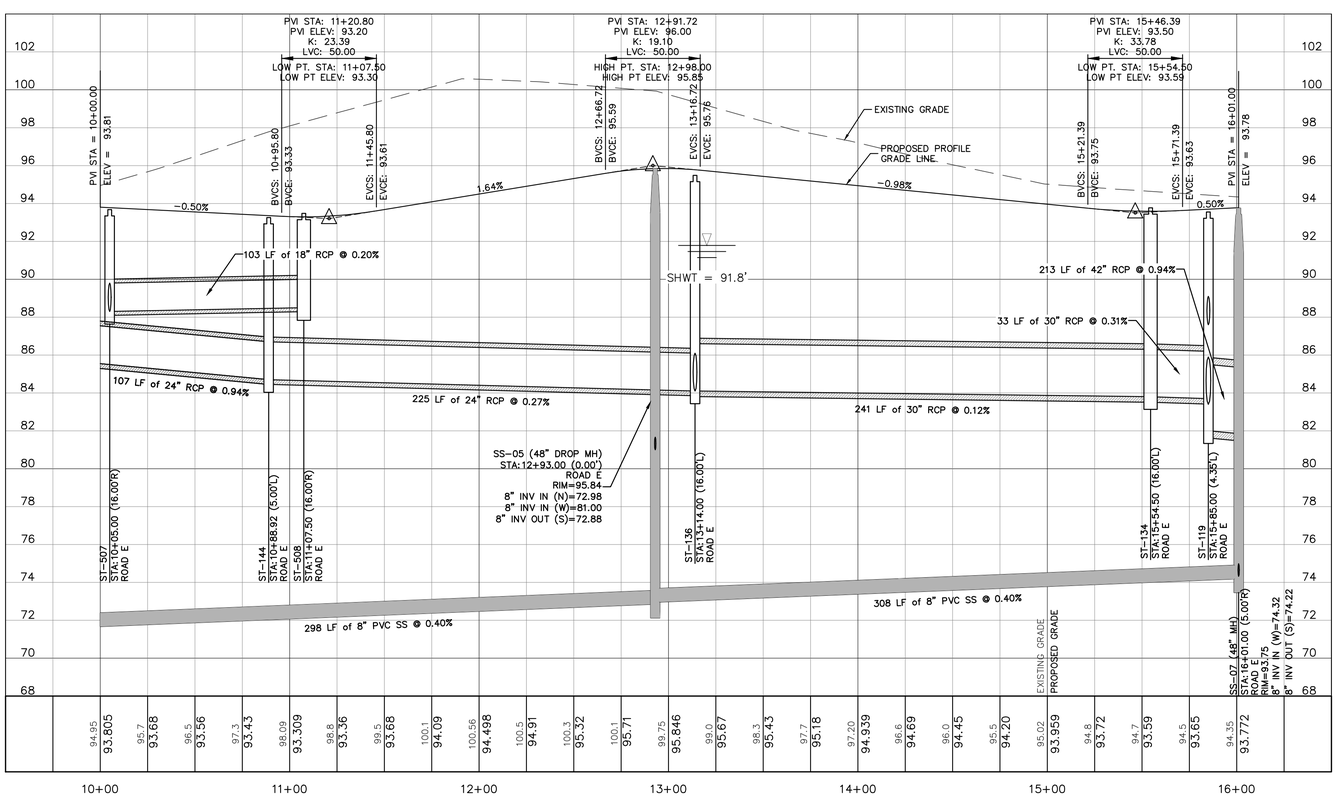
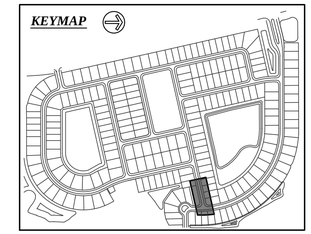


ROAD E: STA 10+00.00 - 16+01.00

TYPE 4 LOCAL ROAD, DESIGN SPEED 15 MPH
SCALE: 1" = 40' HORZ
1" = 4' VERT

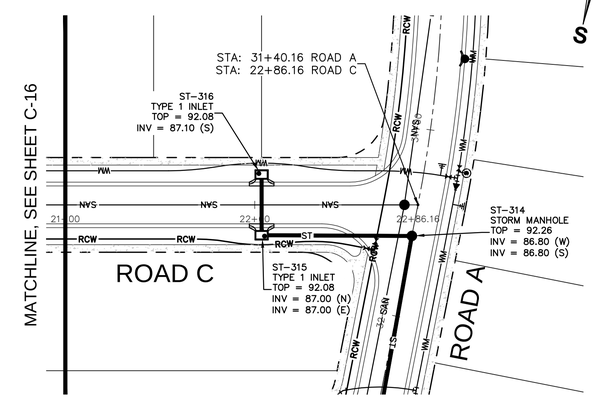


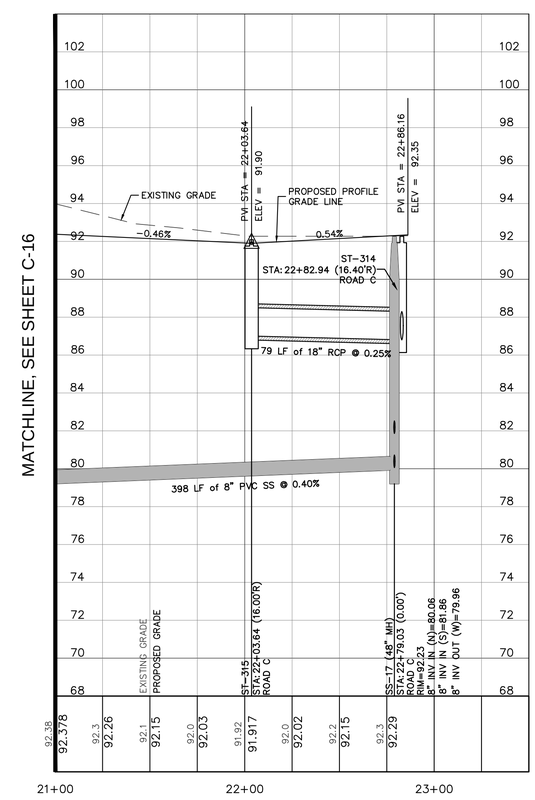




ROAD C: STA 21+00 - 22+86.16

(CONTINUED FROM SHEET C-16)
TYPE 4 LOCAL ROAD, DESIGN SPEED 15 MPH
SCALE: 1" = 40' HORZ
1" = 4' VERT





NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: 1" = 40'
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
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PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. FLEEMAN, P.E.
License Number 55362

SHEET TITLE

ROAD E PLAN & PROFILE

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-21

Printed: August 24, 2015 (11:32am EST) by: pcarballo
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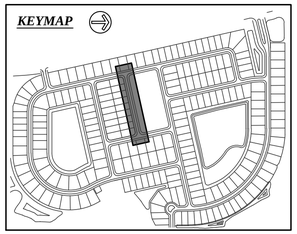
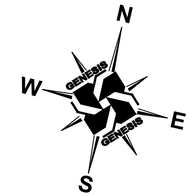
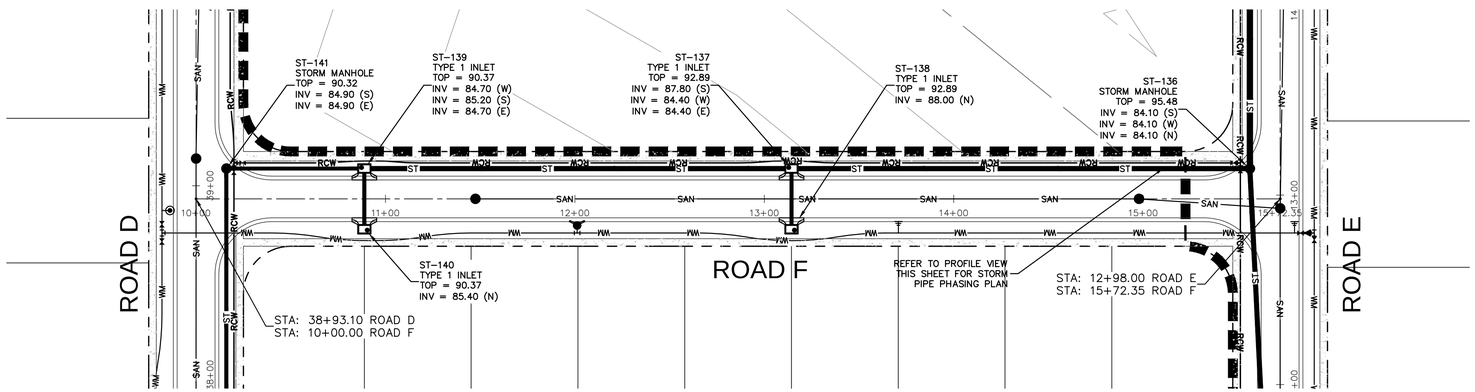
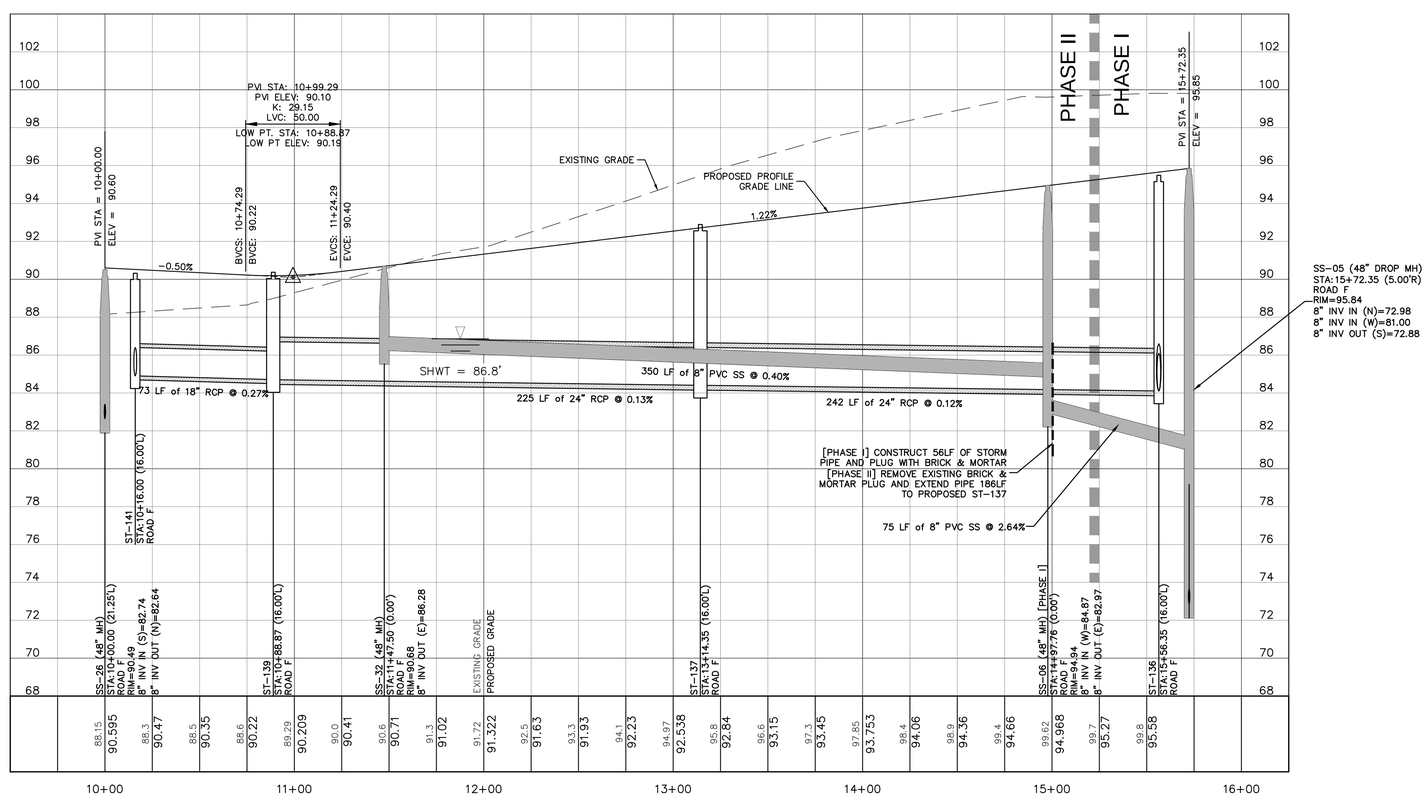


ROAD F: STA 10+00 - 15+72.35

TYPE 4 LOCAL ROAD, DESIGN SPEED 15 MPH
SCALE: 1" = 40' HORZ
1" = 4' VERT







Printed: August 24, 2015 (11:32am EST) by: pcarballo
F:\6216\005\CAD.ENG\6216-005_PLN-PROF.DWG

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: 1" = 40'
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000466 FL LB 0000616 FL LC-26000022

PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. TIEZMAN, P.E.
License Number 53362

SHEET TITLE

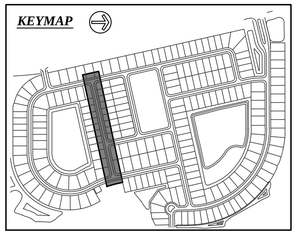
ROAD F PLAN & PROFILE

PROJECT NAME

GRANTHAM RANCH EAST

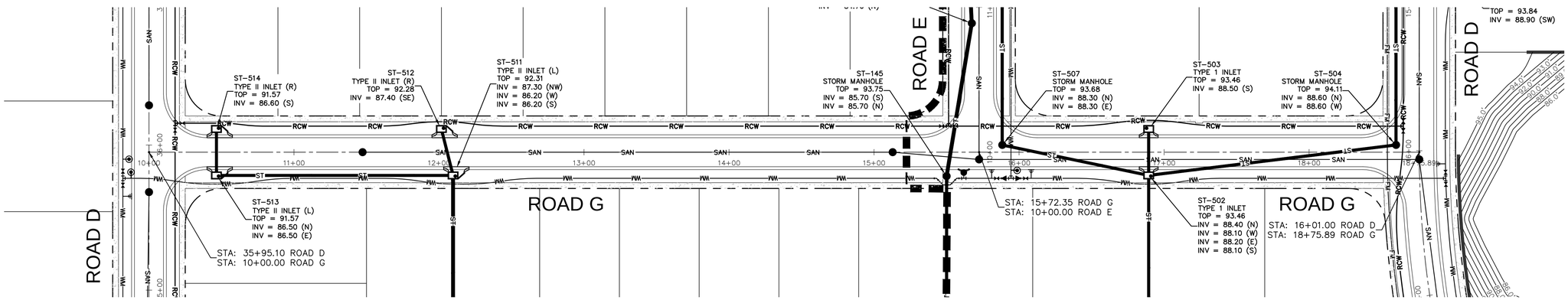
SHEET NUMBER

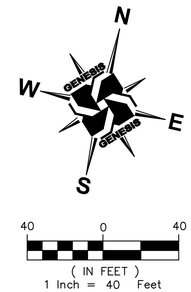
C-22

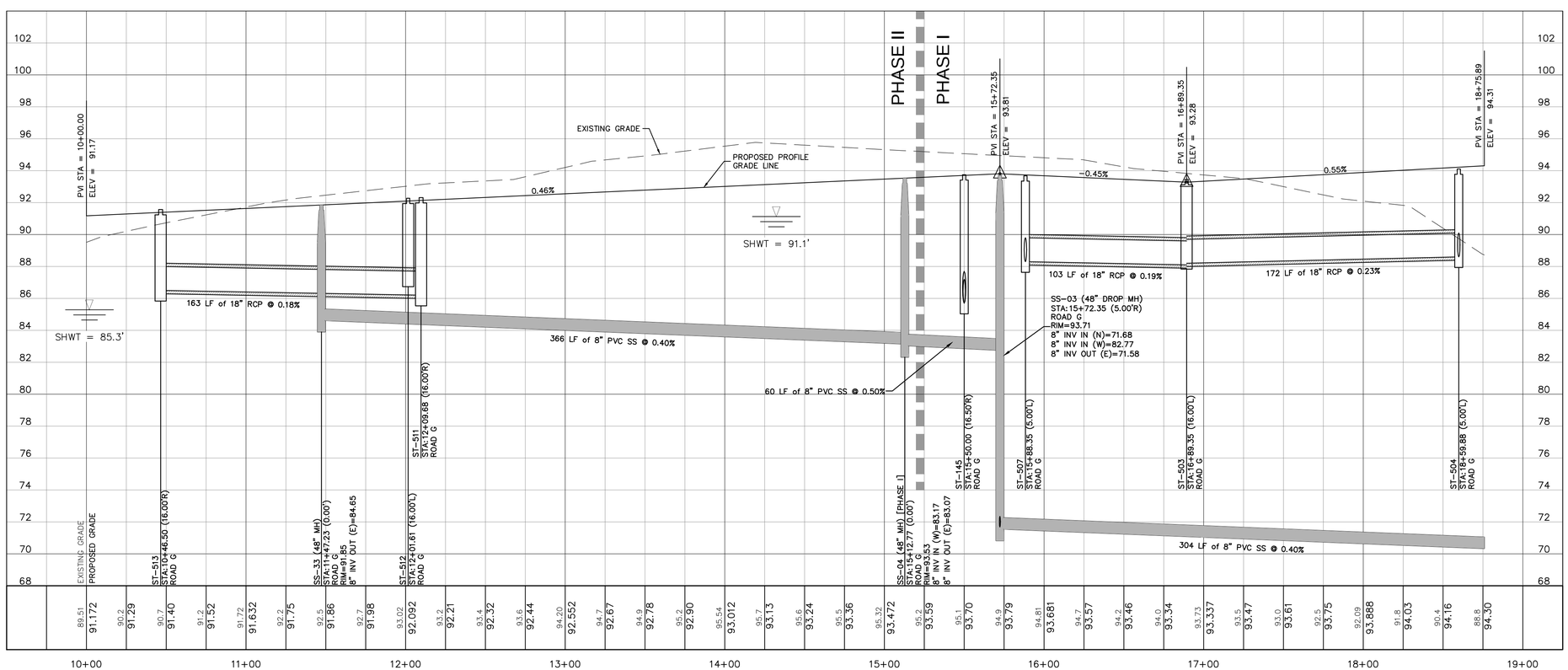


ROAD G: STA 10+00 - 18+75.89

TYPE 4 LOCAL ROAD, DESIGN SPEED 15 MPH
SCALE: 1" = 40' HORZ
1" = 4' VERT







NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: 1" = 40'
PROJECT NUMBER 6216-005
PLAN DATE AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL LC-26000602 FL LB-1900605

PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. TIEDEMAN, P.E.
License Number 55362

SHEET TITLE
ROAD G PLAN & PROFILE

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-23

Printed: August 24, 2015 (11:33am EST) by: pcarballo
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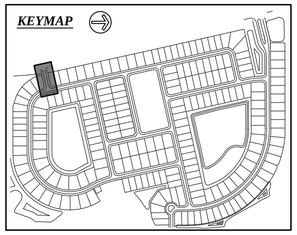
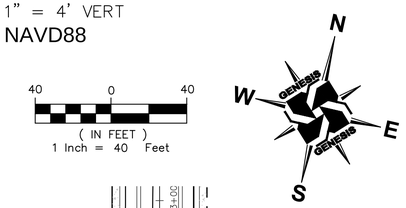
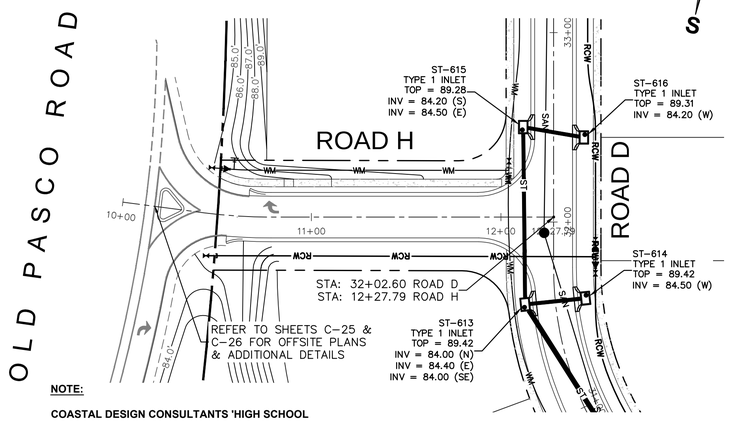


ROAD H: STA 10+00 - 12+15.71

TYPE 3 LOCAL ROAD, DESIGN SPEED 20 MPH
SCALE: 1" = 40' HORZ
1" = 4' VERT
NAVD88

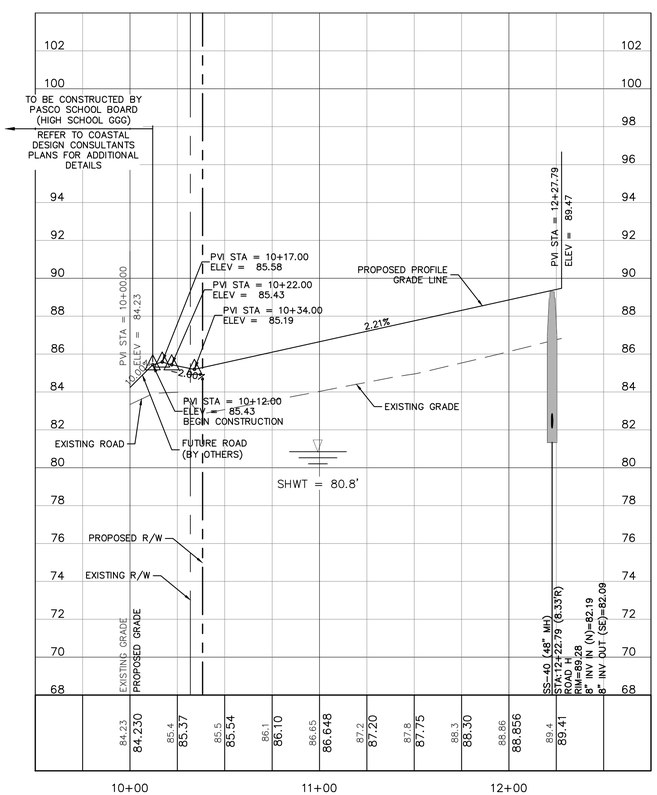


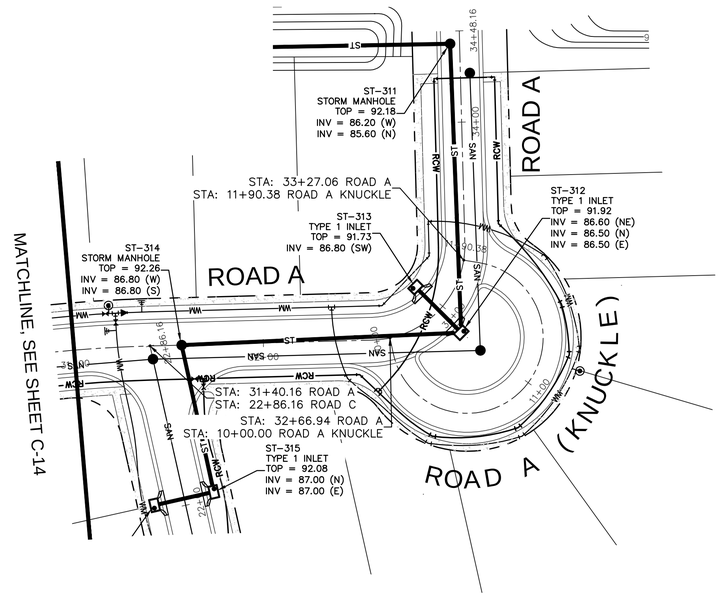


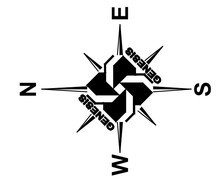
NOTE:

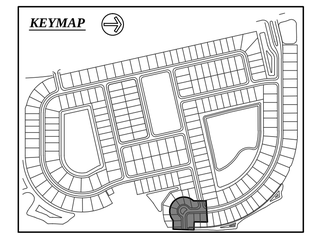
COASTAL DESIGN CONSULTANTS 'HIGH SCHOOL GGG' CONSTRUCTION PLANS REFERENCE NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD29)

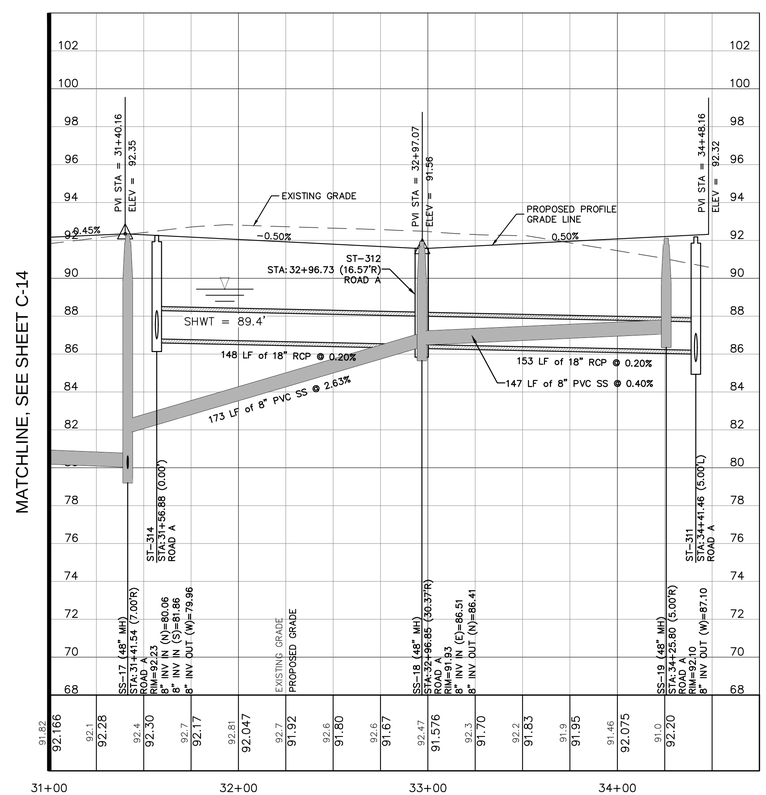
NAVD88 = NGVD29 - 0.82

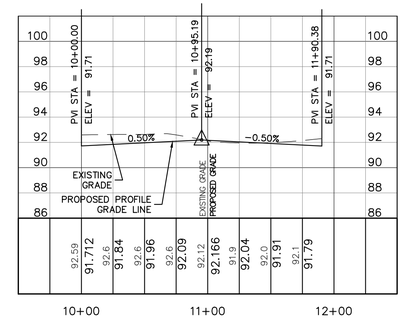












ROAD A (KNUCKLE): STA 10+00 - 11+90.38

TYPE 4 LOCAL ROAD, DESIGN SPEED 15 MPH
SCALE: 1" = 60' HORZ
1" = 6' VERT

ROAD A: STA 31+00 - 34+48.16

TYPE 2 LOCAL ROAD, DESIGN SPEED 25 MPH
SCALE: 1" = 40' HORZ
1" = 4' VERT

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: 1" = 40'
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000466 FL LB 0000616 FL LC-26000022

PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. TLEEMAN, P.E.
License Number 55.962

SHEET TITLE

ROAD H PLAN & PROFILE

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-24

Printed: August 24, 2015 (11:35am EST) by: pcorbello
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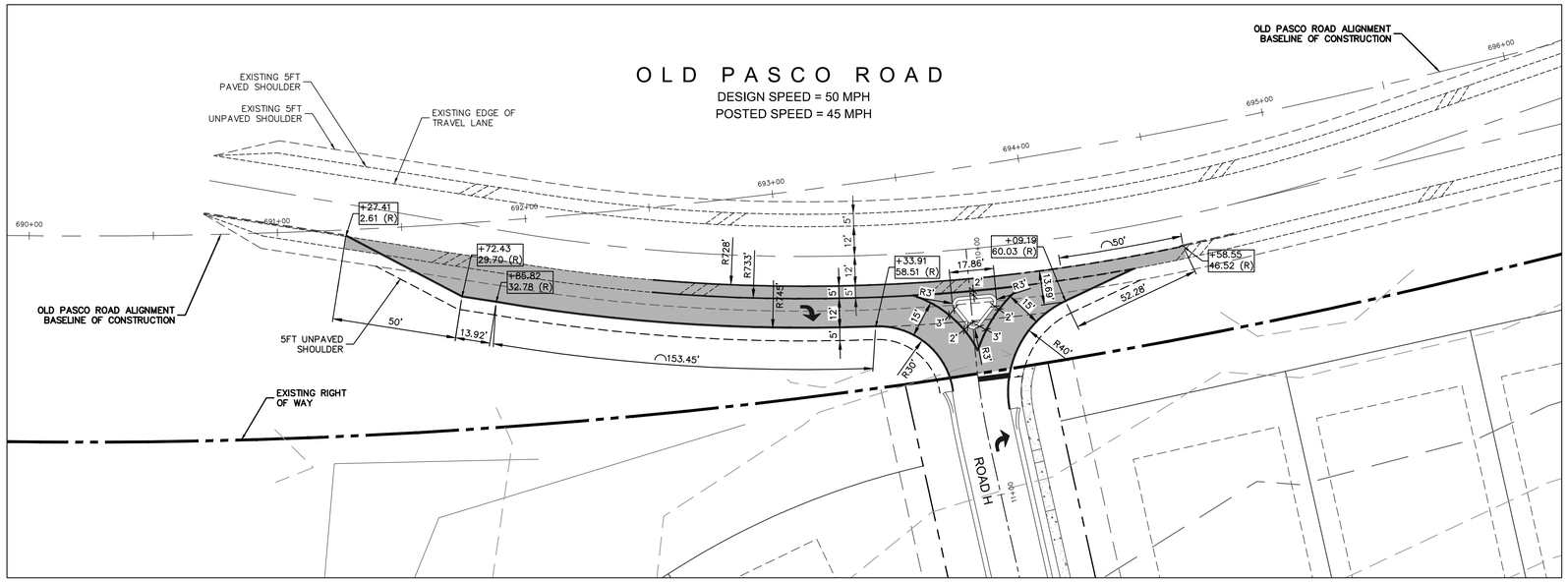
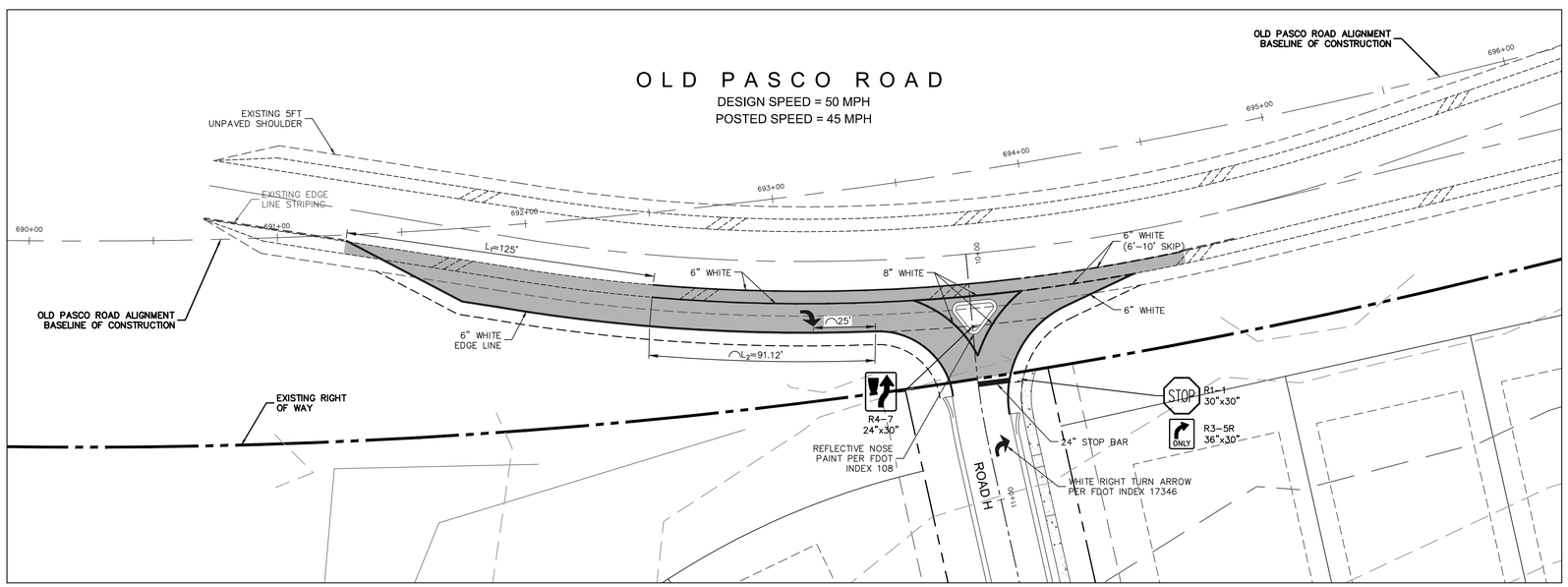
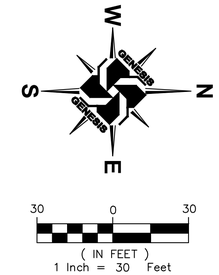


HORIZONTAL CONTROL PLAN



SIGNAGE & PAVEMENT MARKING PLAN



NOTE:

1. ITEMS SHOWN AS 'EXISTING' ON OFFSITE CONSTRUCTION PLANS DEPICT FUTURE IMPROVEMENTS ASSOCIATED WITH 'HIGH SCHOOL GGG' PROJECT AS SHOWN ON PLANS DEVELOPED BY COASTAL DESIGN CONSULTANTS, INC.
2. ALL STRIPING & MARKINGS WITHIN PUBLIC RIGHT-OF-WAY TO BE THERMOPLASTIC
3. ALL EXISTING SIGNS SHALL BE REPLACED AND/OR RELOCATED AS NECESSARY; UNLESS OTHERWISE INDICATED

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY:	DBF	CHECKED BY:	DBF
DRAWN BY:	DBF/PGC	SCALE:	1" = 30'

PROJECT NUMBER 6216-005
PLAN DATE AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000469 FL LB 0000610 FL LC-26000072

PREPARED FOR

CWES XXI, LLC

SEAL

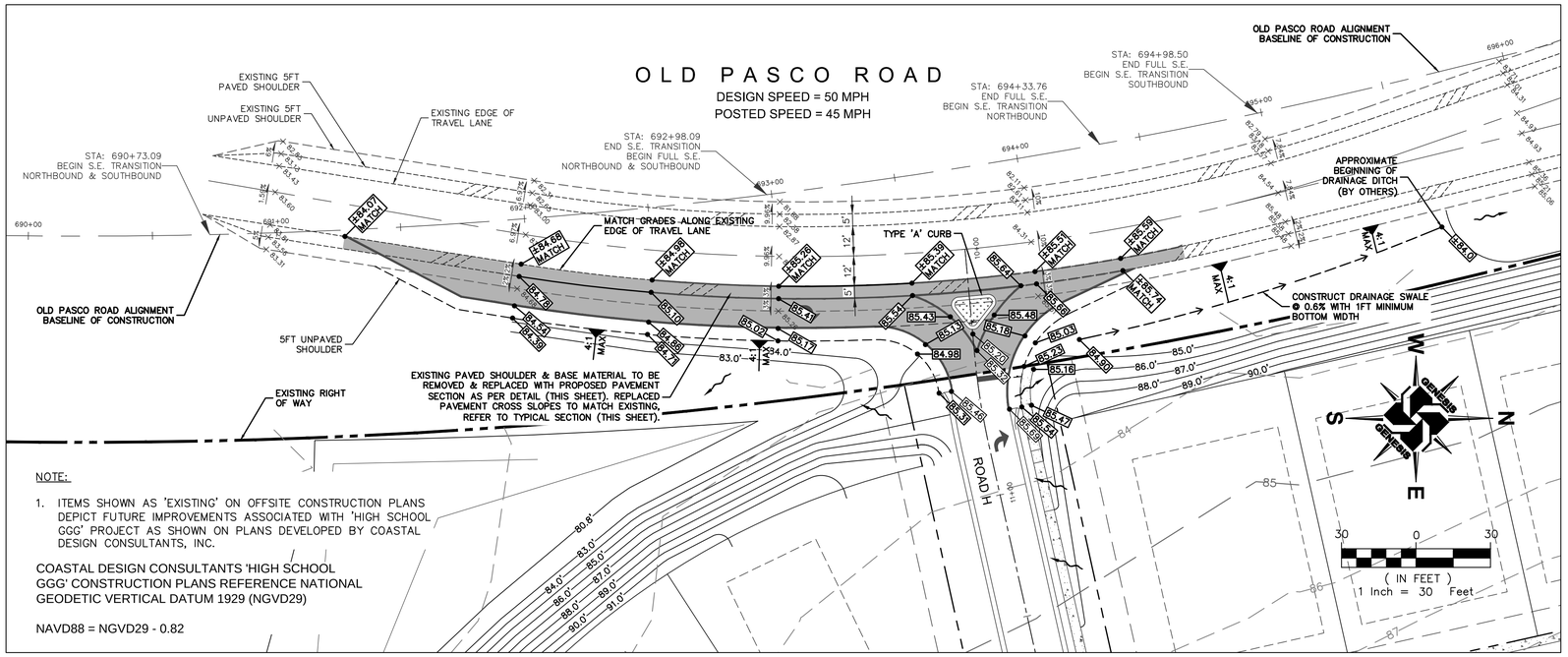
DAVID B. TIEZEMAN, P.E.
License Number 55362

SHEET TITLE
OFFSITE HORIZONTAL CONTROL & SIGNAGE & MARKING PLAN

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-25

Printed: August 24, 2015 (11:03am EST) by: pcarballo
F:\6216\005\CAD.ENG\6216-005_DRIVEWAY.DWG



NOTE:

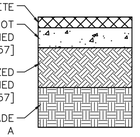
1. ITEMS SHOWN AS 'EXISTING' ON OFFSITE CONSTRUCTION PLANS DEPICT FUTURE IMPROVEMENTS ASSOCIATED WITH 'HIGH SCHOOL GGG' PROJECT AS SHOWN ON PLANS DEVELOPED BY COASTAL DESIGN CONSULTANTS, INC.

COASTAL DESIGN CONSULTANTS 'HIGH SCHOOL GGG' CONSTRUCTION PLANS REFERENCE NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD29)

NAVD88 = NGVD29 - 0.82

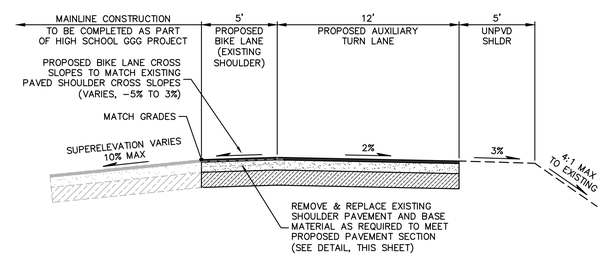
PAVING, GRADING, & DRAINAGE PLAN

OFF-SITE PAVEMENT SECTION



PROPOSED OFF-SITE ROADWAY DESIGN	
MIN. SN REQUIRED FOR MAJOR COLLECTOR = 3.70 PER [901.6(D)4(a) LDC]	
LAYER COEFFICIENTS:	THICKNESS
0.44 – TYPE SP-12.5 SURFACE COURSE	3.0"
0.15 – CRUSHED CONCRETE BASE COURSE (LBR 100)	10"
0.08 – TYPE B STABILIZED SUBGRADE (LBR 40)	12"
SN = (0.44*3.0) + (0.15*10) + (0.08*12) = 3.78 3.78 ≥ 3.70	

OFF-SITE TYPICAL SECTION



NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY:	DBF	CHECKED BY:	DBF
DRAWN BY:	DBF/PGC	SCALE:	1" = 30'

PROJECT NUMBER 6216-005
PLAN DATE AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000695 FL LB 0000610 FL LC-26000022

PREPARED FOR

CWES XXI, LLC

SEAL

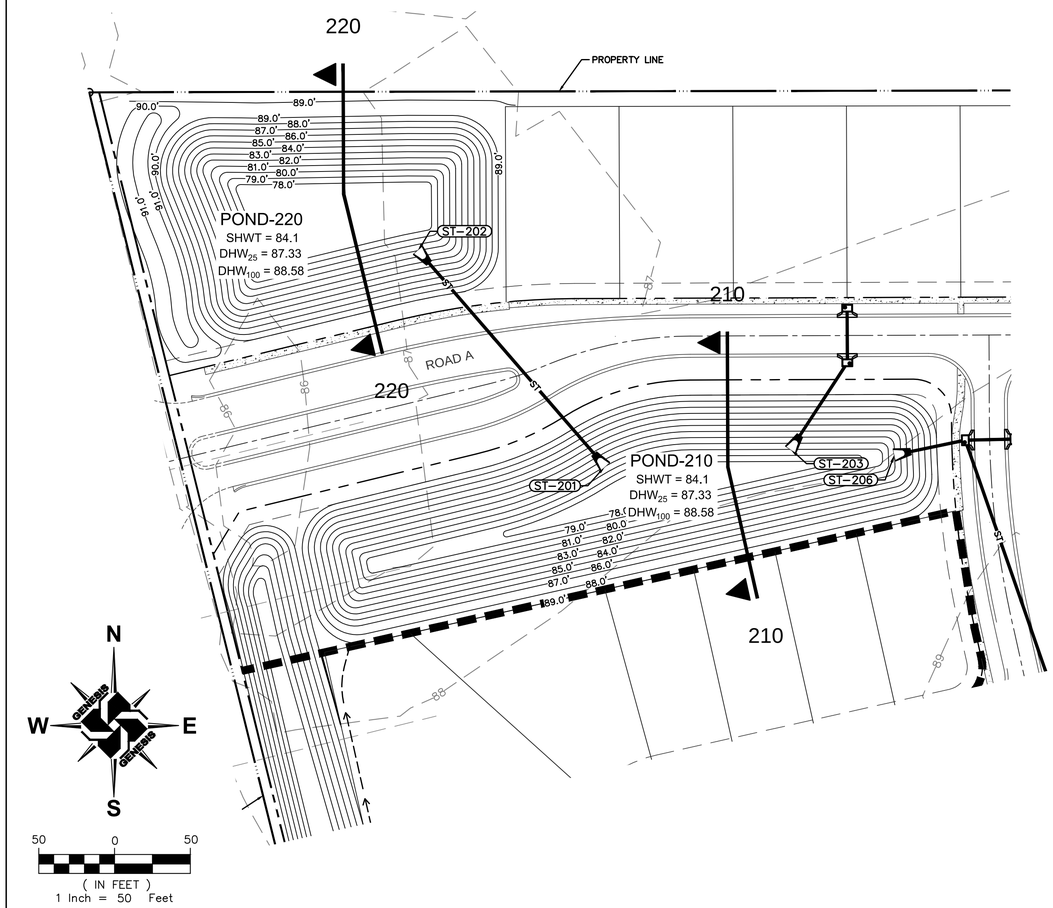
DAVID B. TIEDEMAN, P.E.
License Number 55302

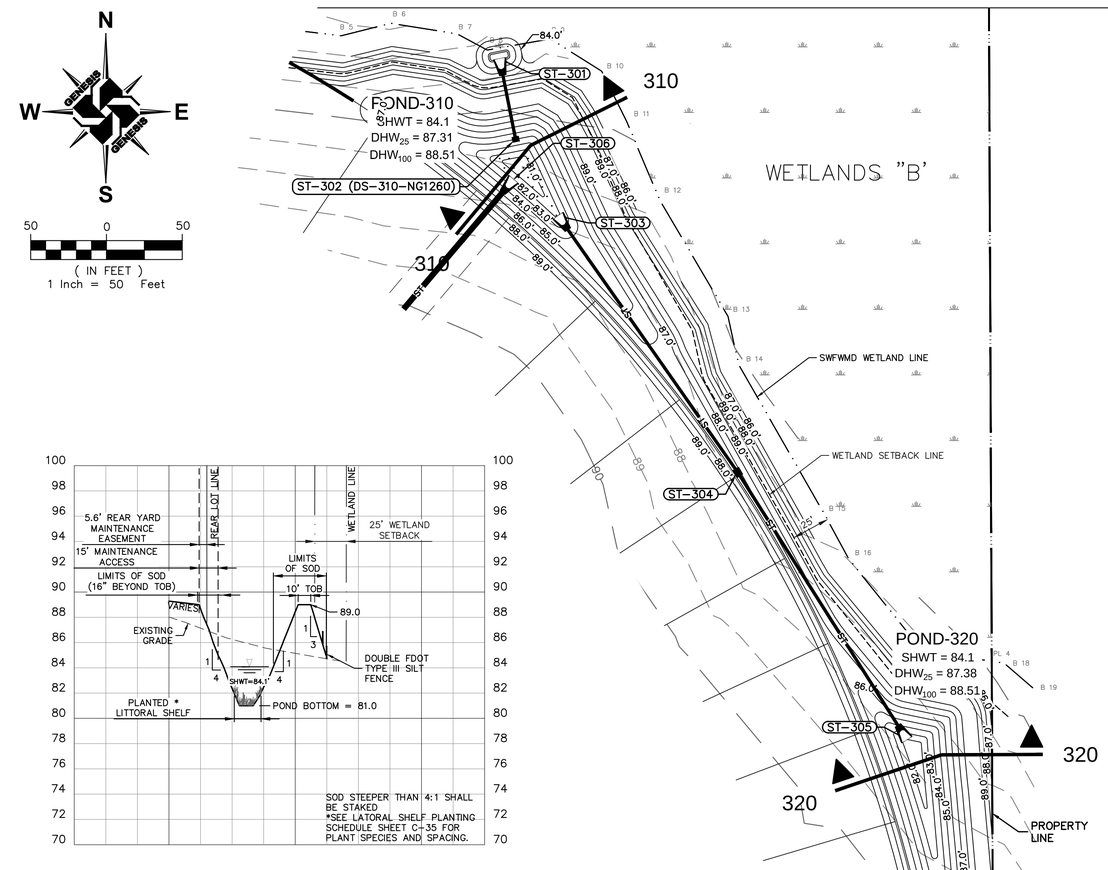
SHEET TITLE
OFFSITE PAVING, GRADING, & DRAINAGE PLAN

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-26

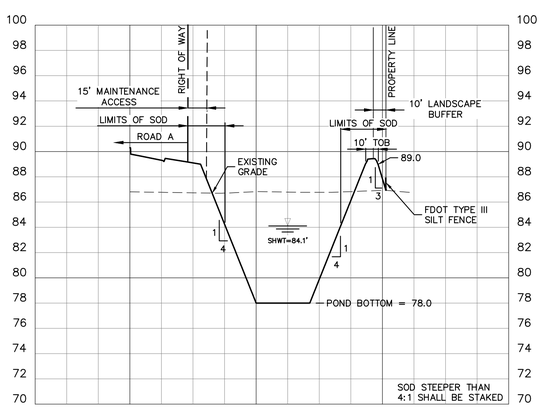
Printed: August 24, 2015 (11:03am EST) by: pcarballo
F:\6216\005\CAD.ENG\6216-005_DRIVEWAY.DWG





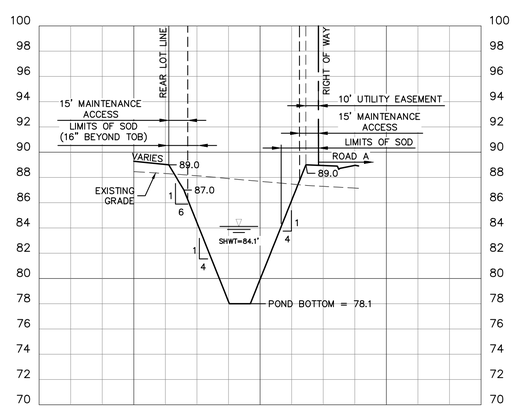
POND-310 CROSS SECTION

SCALE: 1" = 60' HORZ
1" = 6' VERT



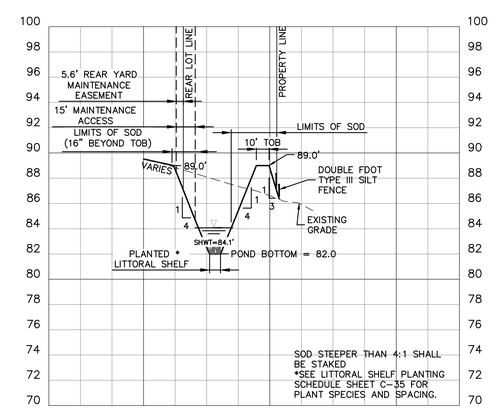
POND-220 CROSS SECTION

SCALE: 1" = 60' HORZ
1" = 6' VERT



POND-210 CROSS SECTION

SCALE: 1" = 60' HORZ
1" = 6' VERT



POND-320 CROSS SECTION

SCALE: 1" = 60' HORZ
1" = 6' VERT

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: 1" = 50'
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000040 FL LB 0000616 FL LC-26000022

PREPARED FOR:
CWES XXI, LLC

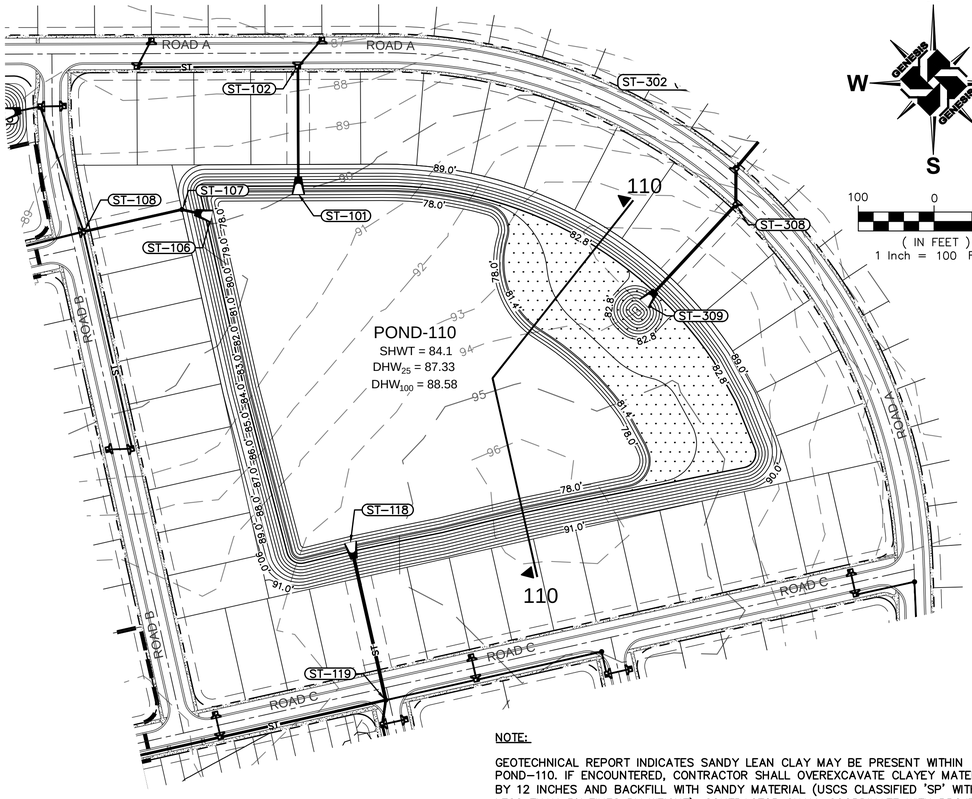
SEAL
DAVID B. FLEEMAN, P.E.
License Number 45362

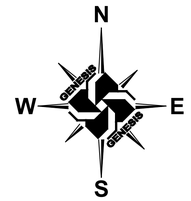
SHEET TITLE
POND CROSS SECTIONS

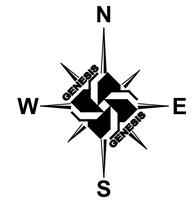
PROJECT NAME
GRANTHAM RANCH EAST

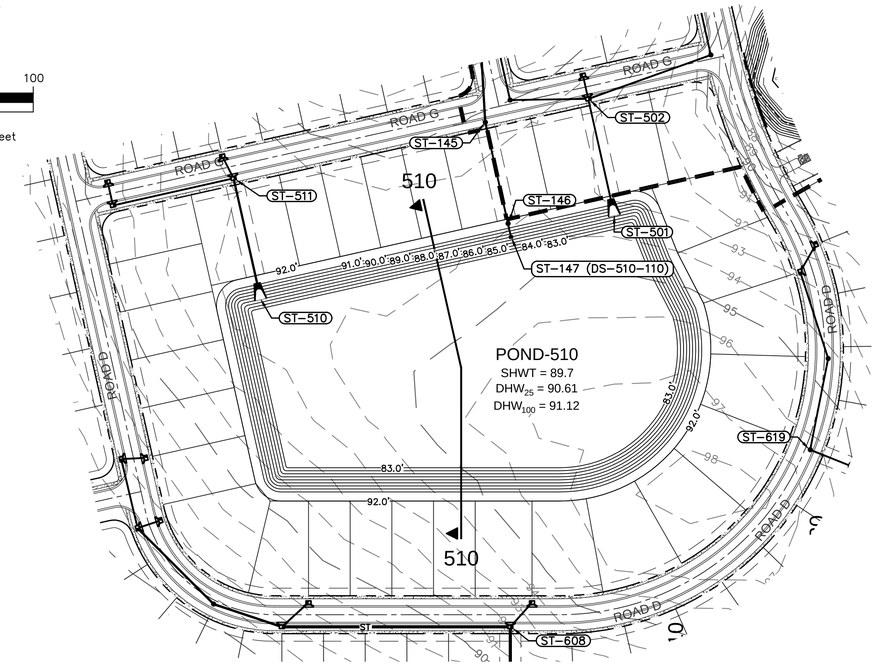
SHEET NUMBER
C-27

Printed: August 24, 2015 (11:05am EST) by: pcarbello
F:\6216\005\CAD.ENG\6216-005_POND-CS.DWG



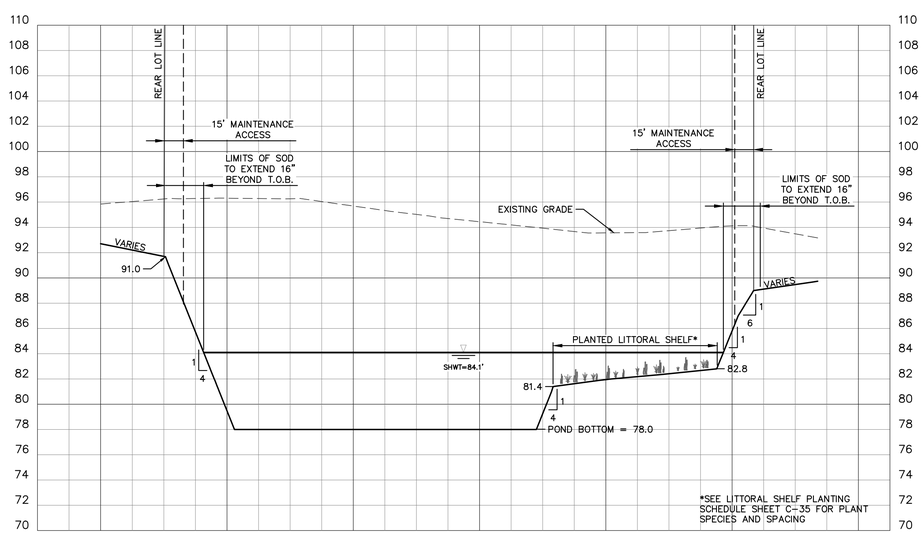






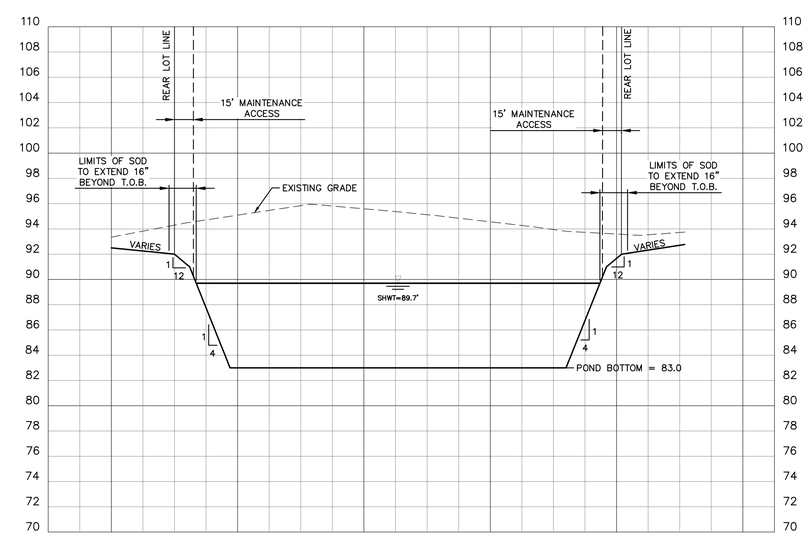
NOTE:

GEOTECHNICAL REPORT INDICATES SANDY LEAN CLAY MAY BE PRESENT WITHIN POND-110. IF ENCOUNTERED, CONTRACTOR SHALL OVEREXCAVATE CLAYEY MATERIAL BY 12 INCHES AND BACKFILL WITH SANDY MATERIAL (USCS CLASSIFIED 'SP' WITH LESS THAN 5% FINES BY WEIGHT). CONTRACTOR SHALL COORDINATE WITH PROJECT GEOTECHNICAL ENGINEER TO HAVE POND BOTTOM EVALUATED DURING EXCAVATION TO DETERMINE IF OVEREXCAVATION AND BACKFILL IS REQUIRED. OVEREXCAVATED MATERIAL MAY ONLY BE USED IN NON-STRUCTURAL LANDSCAPE AREAS.



POND-110 CROSS SECTION

SCALE: 1" = 60' HORZ
1" = 6' VERT



POND-510 CROSS SECTION

SCALE: 1" = 60' HORZ
1" = 6' VERT

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: 1" = 100'
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000600 FL LB 0000615 FL LC-26000022

PREPARED FOR:

CWES XXI, LLC

SEAL

DAVID B. FLEEMAN, P.E.
License Number 53362

SHEET TITLE

POND CROSS SECTIONS

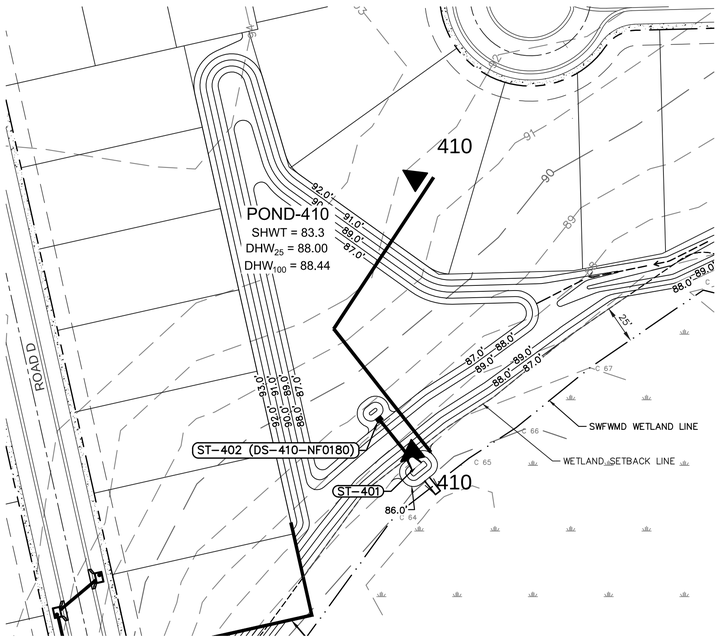
PROJECT NAME

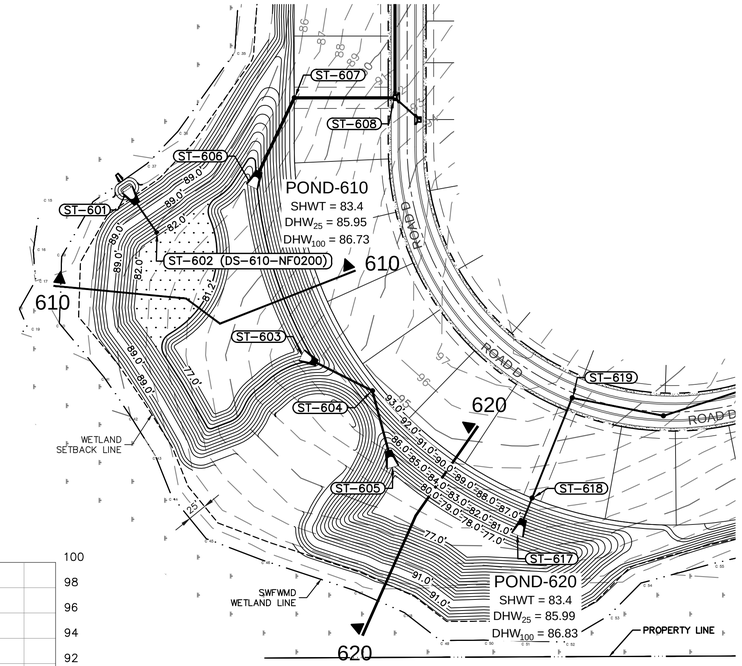
GRANTHAM RANCH EAST

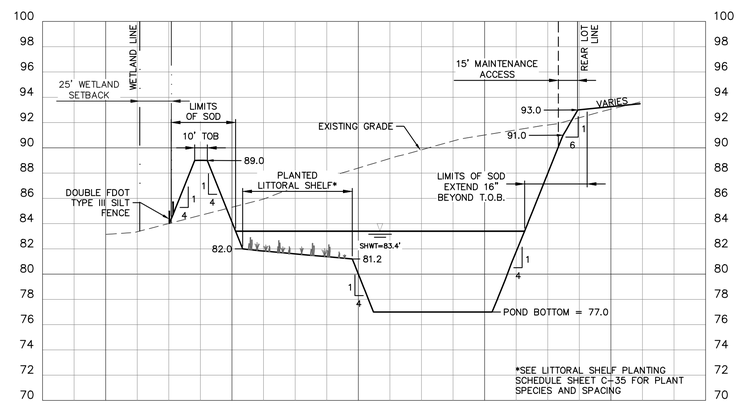
SHEET NUMBER

C-28

Printed: August 24, 2015 (11:05am EST) by: pcarballo
F:\6216\005\CAD.ENG\6216-005_POND-CS.DWG

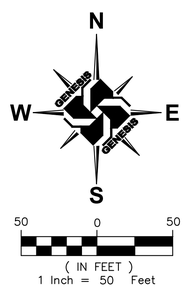


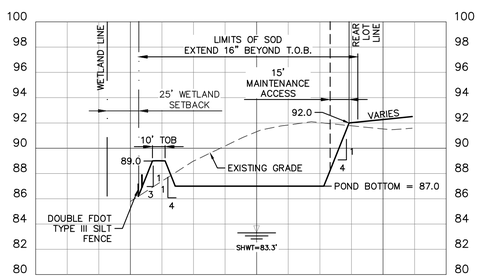




POND-610 CROSS SECTION

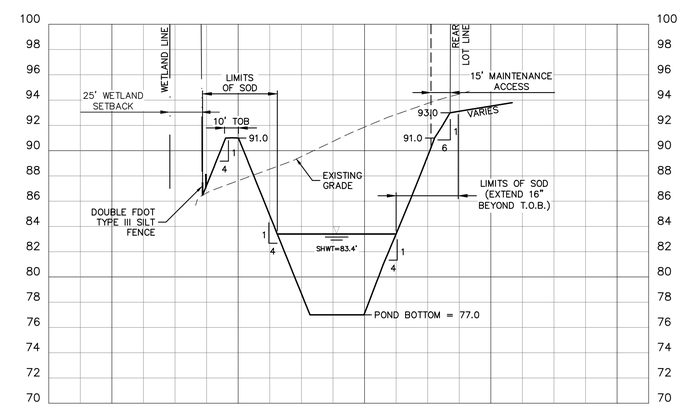
SCALE: 1" = 60' HORZ
1" = 6' VERT





POND-410 CROSS SECTION

SCALE: 1" = 60' HORZ
1" = 6' VERT



POND-620 CROSS SECTION

SCALE: 1" = 60' HORZ
1" = 6' VERT

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: 1" = 100'
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
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PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. FLEEMAN, P.E.
License Number 55,362

SHEET TITLE

POND CROSS SECTIONS

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-29

Printed: August 24, 2015 (11:05am EST) by: pcarballo
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PASCO (
SURVEY DISK IN TOP

TEMPORARY CONSTI
O.R. 600

MATCHLINE SEE SHEET C-31

PERMANENT SLOPE EASEMENT
(PARCEL 659)
O.R. BOOK 6267, PAGE 628

SAND BAG HEADWALL
TOP ELEV. = 82.79'
8.0' X 24.0' RCP ELLIPTICAL
INV = 79.17'

CONC PP #4335/5488

FIBER OPTIC MANHOLE TOP ELEV = 81.45

METAL PP #4339/5488

METAL PP #4348/5486

WPP #4342/3924

FIBER OPTIC MANHOLE TOP ELEV = 84.72

5' BARB WIRE FENCE

4' BARB WIRE FENCE

EXISTING 36" RECLAIMED WATERMAIN

EXISTING 12" WATERMAIN

PHASE 2 POINT OF CONNECTION
EXISTING 12" GATE VALVE TO REMAIN
(SEE 'CONTRACT PLANS FOR HIGH SCHOOL GGG OFFSITE ROADWAY AND UTILITY CONSTRUCTION OLD PASCO ROAD' PREPARED BY COASTAL DESIGN CONSULTANTS FOR ADDITIONAL INFORMATION)

PROPSED R/W

EXISTING R/W

PHASE 2 POINT OF CONNECTION TO EXISTING 36" RECLAIMED WATER MAIN STUB OUT (TO BE COORDINATED WITH NEIGHBORING PASCO COUNTY SCHOOL BOARD DEVELOPMENT)

(1) 90° BEND

REMOVE EXISTING 12" CAP
INSTALL 12"X6" REDUCER
PHASE 2 CHLORINE INJECTION POINT

6" PVC RECLAIMED WATERMAIN

6" PVC WATER MAIN

WATER METER (TYP.)

FIRE HYDRANT ASSEMBLY

(1) 6"X6"X6" TEE
(2) GATE VALVE & BOX

SS-40 (48" MH)
STA: 31+94.27 OFF: -5.00L
ROAD D
RIM: 89.28
INV IN: 82.19 8" PVC
INV OUT: 82.09 8" PVC

SS-39 (48" MH)
STA: 30+57.70 OFF: -5.00L
ROAD D
RIM: 89.69
INV IN: 81.54 8" PVC
INV OUT: 81.44 8" PVC

(1) 6"X6"X6" TEE
(2) 6"X4" REDUCER
(2) GATE VALVE & BOX

SS-38 (48" MH)
STA: 29+37.62 OFF: 0.00
ROAD D
RIM: 90.43
INV IN: 80.96 8" PVC
INV OUT: 80.86 8" PVC

4" PVC RECLAIMED WATER MAIN

CHLORINE SAMPLE POINT (TYP.)

CHLORINE INJECTION POINT (TYP.)

RECLAIMED WATER METER (TYP.)

SS-27 (48" MH)
STA: 36+27.42 OFF: 0.00
ROAD D
RIM: 90.98
INV OUT: 83.90 8" PVC

SS-41 (48" MH)
STA: 35+67.60 OFF: 0.00
ROAD D
RIM: 91.02
INV OUT: 83.70 8" PVC

SANITARY LATERAL (TYP.)

(1) 4"X4"X4" TEE
(2) GATE VALVE & BOX

SS-33 (48" MH)
STA: 11+47.23 OFF: 0.00
ROAD G
RIM: 91.85
INV OUT: 84.65 8" PVC

SS-26 (48" MH)
STA: 39+14.35 OFF: 0.00
ROAD D
RIM: 90.49
INV IN: 82.74 8" PVC
INV OUT: 82.64 8" PVC

(1) 6"X6"X6" TEE
(2) GATE VALVE & BOX

(1) 4"X4"X4" TEE
(2) GATE VALVE & BOX

SS-32 (48" MH)
STA: 11+47.50 OFF: 0.00
ROAD F
RIM: 90.68
INV OUT: 86.28 8" PVC

PHASE 1
PHASE 2

ROAD H
ROAD D
ROAD G
ROAD F

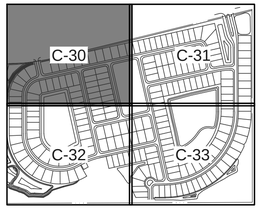
Park

MATCHLINE SEE SHEET C-32

50 0 50
(IN FEET)
1 Inch = 50 Feet

LEGEND

- POTABLE WATER METER
- RECLAIMED WATER METER
- SANITARY SEWER LATERAL
- RECLAIMED WATER SLEEVE
- POTABLE WATER SLEEVE



NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
PROJECT NUMBER 6216-005
DRAWN BY: DBF/PGC
SCALE: 1" = 50'
PLAN DATE AUG 2015

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PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. FIEDMAN, P.E.
License Number 55,362

SHEET TITLE

UTILITY PLAN

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-30

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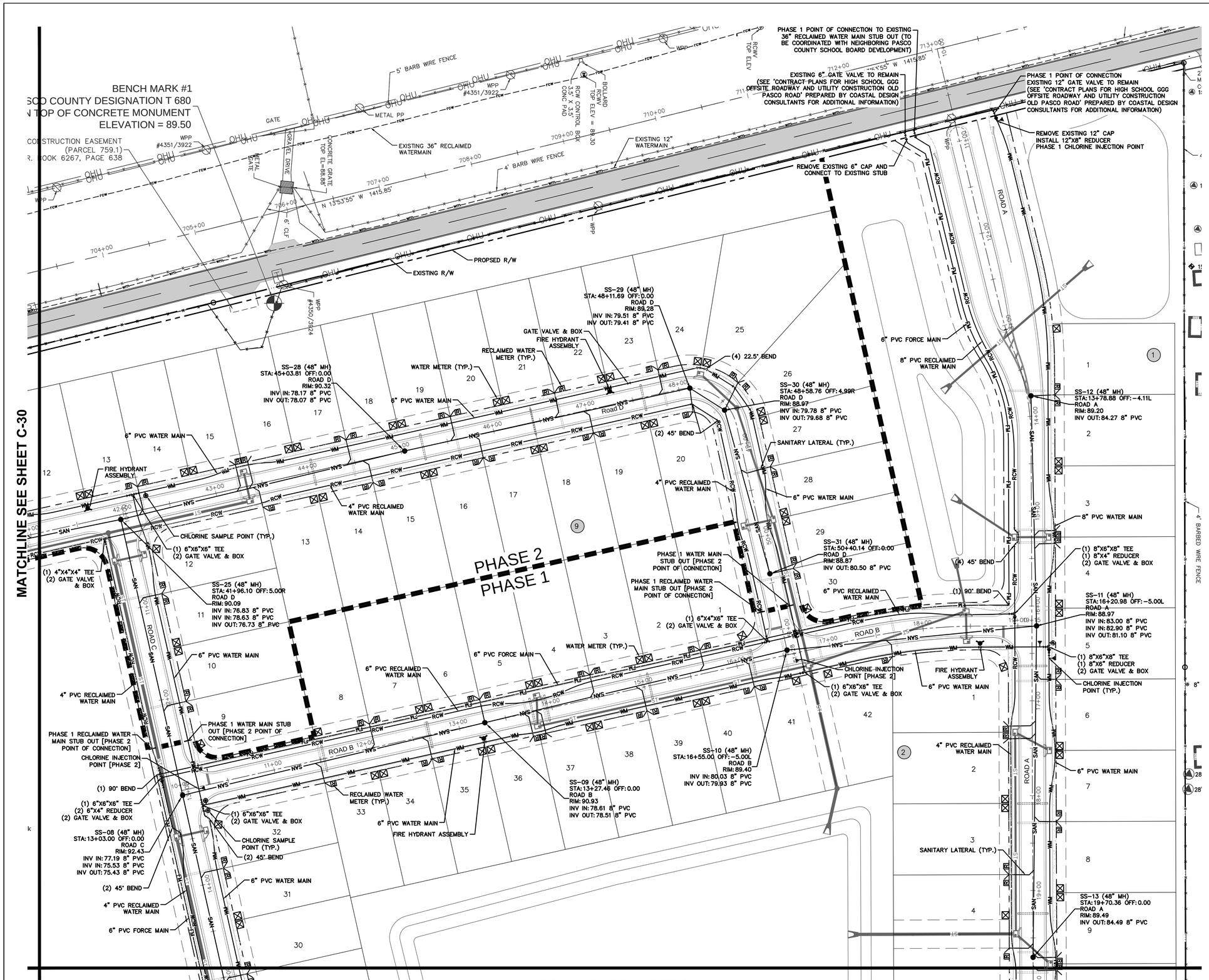
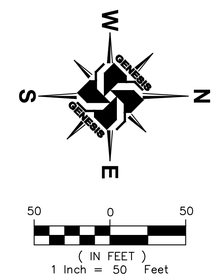
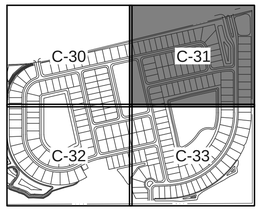




LEGEND

- POTABLE WATER METER
- RECLAIMED WATER METER
- SANITARY SEWER LATERAL
- RECLAIMED WATER SLEEVE
- POTABLE WATER SLEEVE



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		REVISIONS	DBF	
DESIGNED BY:		DBF	PROJECT NUMBER	6216-005
DRAWN BY:		DBF/PGC	PLAN DATE	AUG 2015
			SCALE:	1" = 50'

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PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. FLEEMAN, P.E.
License Number 55352

SHEET TITLE

UTILITY PLAN

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-31

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MATCHLINE SEE SHEET C-30

MATCHLINE SEE SHEET C-33

PHASE 1
PHASE 2

ROAD D

ROAD E

FIRE HYDRANT ASSEMBLY
6" PVC WATER MAIN
4" PVC RECLAIMED WATER MAIN
SANITARY LATERAL (TYP.)
WATER METER (TYP.)
GATE VALVE & BOX
CHLORINE SAMPLE POINT (TYP.)
RECLAIMED WATER METER (TYP.)
SS-37 (48" MH)
STA: 25+37.99 OFF: -5.00L
ROAD D
RIM: 92.47
INV IN: 79.25 8" PVC
INV OUT: 79.15 8" PVC
SS-36 (48" MH)
STA: 23+47.97 OFF: -5.00L
ROAD D
RIM: 93.49
INV IN: 78.38 8" PVC
INV OUT: 78.28 8" PVC
SS-35 (48" MH)
STA: 21+65.17 OFF: -5.00L
ROAD D
RIM: 94.36
INV IN: 77.54 8" PVC
INV OUT: 77.44 8" PVC
SS-34 (48" MH)
STA: 19+67.92 OFF: -5.00L
ROAD D
RIM: 93.30
INV IN: 76.65 8" PVC
INV OUT: 76.55 8" PVC
SS-01 (48" DROP MH)
STA: 17+73.57 OFF: 0.00
ROAD D
RIM: 93.52
INV IN: 69.59 8" PVC
INV IN: 75.77 8" PVC
INV OUT: 69.49 8" PVC
(1) 90° BEND
PHASE 1 RECLAIMED WATER MAIN STUB OUT [PHASE 2 POINT OF CONNECTION]
PHASE 1 WATER MAIN STUB OUT [PHASE 2 POINT OF CONNECTION]
6" PVC FORCE MAIN
SS-02 (48" DROP MH)
STA: 16+06.00 OFF: 0.00
ROAD D
RIM: 94.28
INV IN: 70.36 8" PVC
INV IN: 75.71 8" PVC
INV OUT: 70.26 8" PVC
(1) 6"X6"X6" TEE
(2) GATE VALVE & BOX
SS-14 (48" MH)
STA: 13+03.00 OFF: 0.00
ROAD D
RIM: 94.43
INV IN: 77.03 8" PVC
INV OUT: 76.93 8" PVC
SS-04 [PHASE 1]
STA: 15+12.77 OFF: 0.00
ROAD G
RIM: 93.53
INV IN: 83.17 8" PVC
INV OUT: 83.07 8" PVC
SS-06 [PHASE 1]
STA: 14+97.76 OFF: 0.00
ROAD F
RIM: 94.94
INV IN: 84.87 8" PVC
INV OUT: 82.97 8" PVC
(1) 6"X4"X6" TEE
(2) GATE VALVE & BOX
(1) 8"X8"X8" TEE
(1) 8"X6" REDUCER
(2) GATE VALVE & BOX
SS-05 (48" DROP MH)
STA: 12+93.00 OFF: 0.00
ROAD E
RIM: 95.54
INV IN: 72.98 8" PVC
INV IN: 81.00 8" PVC
INV OUT: 72.88 8" PVC
(1) 4"X6"X4" TEE
(2) GATE VALVE & BOX
(1) 8"X8"X8" TEE
(2) 8"X6" REDUCER
(2) GATE VALVE & BOX
SS-03 (48" DROP MH)
STA: 15+72.35 OFF: 5.00R
ROAD G
RIM: 93.71
INV IN: 71.68 8" PVC
INV IN: 82.77 8" PVC
INV OUT: 71.58 8" PVC
(1) 4"X4"X4" TEE
(2) GATE VALVE & BOX
WETLAND SETBACK LINE
SWFWMD WETLAND LINE
SEASONAL HIGH WATER (CSHWL1)
TOP OF NAIL ELEVATION = 83.3'
WETLAND "C"
SOUTHEAST CORNER
OF THE NW 1/4

(IN FEET)
1 Inch = 50 Feet

LEGEND
- POTABLE WATER METER
- RECLAIMED WATER METER
- SANITARY SEWER LATERAL
- RECLAIMED WATER SLEEVE
- POTABLE WATER SLEEVE

C-30 C-31 C-32 C-33

NO.	DATE	DESCRIPTION	REVISIONS

DESIGNED BY: DBF
DRAWN BY: DBF/PGC
CHECKED BY: DBF
SCALE: 1" = 50'
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

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FL CA 0000466 FL LC-26000022

PREPARED FOR
CWES XXI, LLC

SEAL
DAVID B. FLEEMAN, P.E.
License Number 65362

SHEET TITLE
UTILITY PLAN

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-32

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MATCHLINE SEE SHEET C-31

MATCHLINE SEE SHEET C-32

PHASE 1
(ENTIRE PAGE)

(1) 8"X6"X8" TEE
(1) 8"X4" REDUCER
(2) GATE VALVE & BOX

6" PVC WATER MAIN

6" PVC RECLAIMED WATER MAIN

(1) 6"X6"X6" TEE
(1) 8"X6" REDUCER
(2) GATE VALVE & BOX

SS-15 (48" MH)
STA: 16+33.64 OFF: 0.00
ROAD C
RIM: 93.47
INV OUT: 88.00 8" PVC

8" PVC WATER MAIN

SS-07 (48" MH)
STA: 15+77.35 OFF: 0.00
ROAD C
RIM: 93.75
INV IN: 74.32 8" PVC
INV OUT: 74.22 8" PVC

RECLAIMED WATER METER (TYP.)

6" PVC FORCE MAIN

6" PVC WATER MAIN

(1) 4"x4"x4" TEE
(2) GATE VALVE & BOX

WATER METER (TYP.)

SS-16 (48" MH)
STA: 18+80.88 OFF: 0.00
ROAD C
RIM: 93.39
INV IN: 78.35 8" PVC
INV IN: 80.15 8" PVC
INV OUT: 78.25 8" PVC

FIRE HYDRANT ASSEMBLY

4" PVC RECLAIMED WATER MAIN

SANITARY LATERAL (TYP.)

4" PVC WATER MAIN

4" PVC RECLAIMED WATER MAIN

SS-18 (48" MH)
STA: 32+96.85 OFF: 30.37R
ROAD A
RIM: 91.93
INV IN: 86.51 8" PVC
INV OUT: 86.41 8" PVC

(1) 4"X4"X4" TEE
(2) GATE VALVE & BOX

(1) 4"X4"X4" TEE

(1) 22.5° BEND

(6) 22.5° BEND

(2) 45° BEND

(1) 90° BEND

SS-19 (48" MH)
STA: 34+25.80 OFF: 5.00R
ROAD A
RIM: 92.10
INV OUT: 87.10 8" PVC

SS-17 (48" MH)
STA: 22+79.03 OFF: 0.00
ROAD C
RIM: 92.23
INV IN: 80.06 8" PVC
INV IN: 81.86 8" PVC
INV OUT: 79.96 8" PVC

4" PVC WATER MAIN

(1) 4"X4"X4" TEE

FIRE HYDRANT ASSEMBLY

(1) 6"X6"X6" TEE
(1) 6"X4" REDUCER
(2) GATE VALVE & BOX

SS-20 (48" MH)
STA: 29+94.87 OFF: 0.00
ROAD A
RIM: 91.69
INV IN: 80.75 8" PVC
INV OUT: 80.65 8" PVC

4" PVC RECLAIMED WATER MAIN

SS-21 (48" MH)
STA: 28+05.85 OFF: -5.00L
ROAD A
RIM: 90.74
INV IN: 81.61 8" PVC
INV OUT: 81.51 8" PVC

6" PVC WATER MAIN

SS-22 (48" MH)
STA: 25+36.58 OFF: -5.00L
ROAD A
RIM: 89.81
INV IN: 82.80 8" PVC
INV OUT: 82.70 8" PVC

SS-23 (48" MH)
STA: 22+67.31 OFF: -5.00L
ROAD A
RIM: 90.72
INV IN: 83.99 8" PVC
INV OUT: 83.89 8" PVC

RECLAIMED WATER METER (TYP.)

FIRE HYDRANT ASSEMBLY

GATE VALVE & BOX

SS-24 (48" MH)
STA: 20+52.42 OFF: 0.00
ROAD A
RIM: 89.86
INV OUT: 84.86 8" PVC

4" PVC RECLAIMED WATER MAIN

6" PVC WATER MAIN

SANITARY LATERAL (TYP.)

WATER METER (TYP.)

SWFWMD WETLAND S

4" BARBED WIRE FENCE

SEASONAL HIGH WATER (BSHWL2)
TOP OF NAIL ELEVATION = 81.9'

SEASONAL HIGH WATER (BSHWL1)
TOP OF NAIL ELEVATION = 82.0'

SWFWMD WETLAND LINE
WETLAND SETBACK LINE

WETLAND "B"

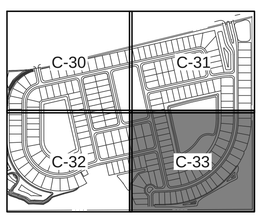
ROAD E
ROAD C
ROAD A

N
S
E
W

50 0 50
(IN FEET)
1 Inch = 50 Feet

LEGEND

- POTABLE WATER METER
- RECLAIMED WATER METER
- SANITARY SEWER LATERAL
- RECLAIMED WATER SLEEVE
- POTABLE WATER SLEEVE



NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
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SCALE: 1" = 50'
PROJECT NUMBER 6216-005
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PREPARED FOR

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SEAL

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License Number 55,362

SHEET TITLE

UTILITY PLAN

PROJECT NAME

GRANTHAM RANCH EAST

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C-33

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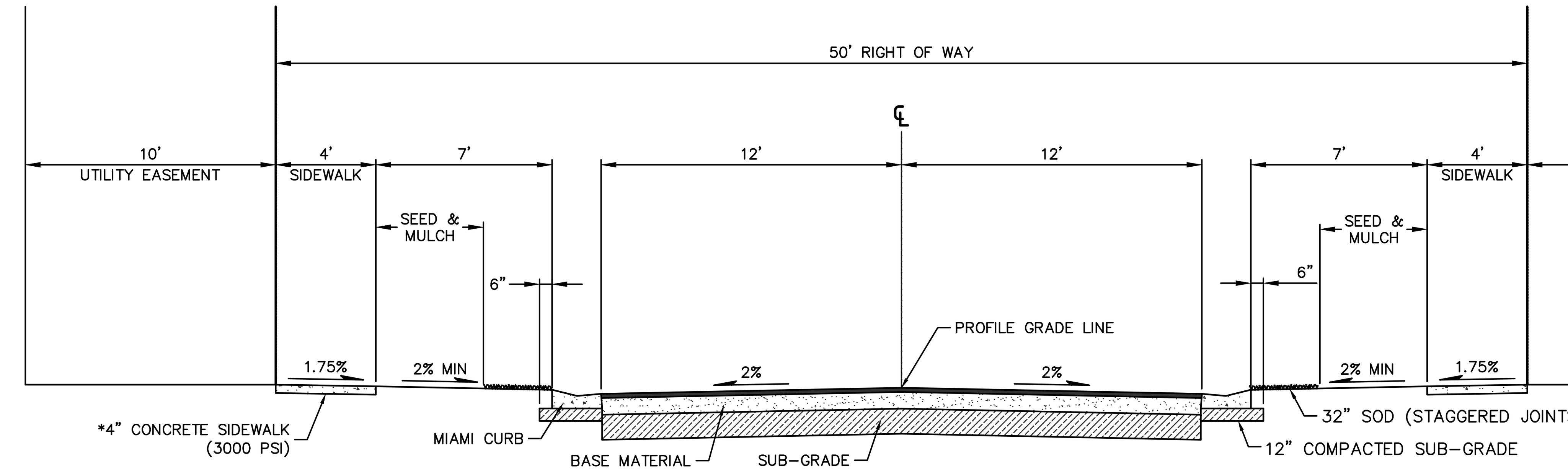
PAVING, GRADING & DRAINAGE NOTES

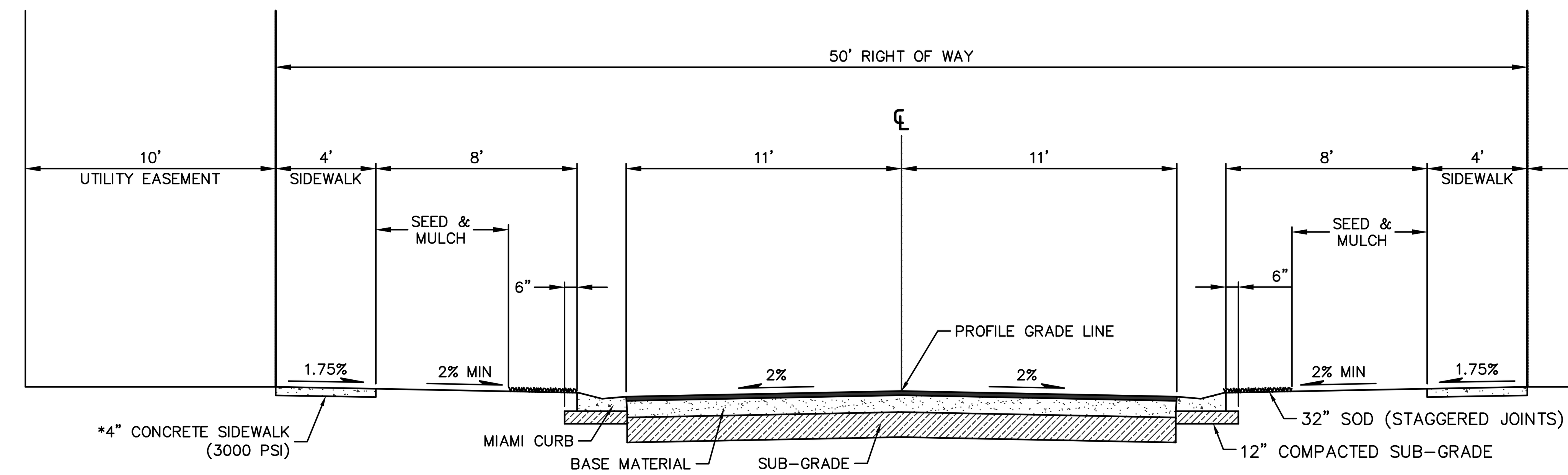
1. ALL DELETERIOUS SUBSURFACE MATERIAL (I.E. MUCK, PEAT, BURIED DEBRIS) IS TO BE EXCAVATED IN ACCORDANCE WITH THESE PLANS OR AS DIRECTED BY THE OWNER, THE OWNER'S ENGINEER, OR OWNER'S GEOTECHNICAL ENGINEER. DELETERIOUS MATERIAL IS TO BE STOCKPILED OR REMOVED FROM THE SITE AS DIRECTED BY THE OWNER. EXCAVATED AREAS TO BE BACK FILLED WITH APPROVED MATERIALS AND COMPACTED AS SHOWN ON THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING DELETERIOUS MATERIAL FROM THE SITE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND SHALL PROVIDE BRACING, SHEETING OR SHORING AS NECESSARY. DEWATERING METHODS SHALL BE USED AS REQUIRED TO KEEP TRENCHES DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED.
3. PROPOSED SPOT ELEVATIONS REPRESENT FINISHED PAVEMENT OR GROUND SURFACE GRADE UNLESS OTHERWISE NOTED ON DRAWINGS.
4. CONTRACTOR SHALL TRIM, TACK AND MATCH EXISTING PAVEMENT AT LOCATIONS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT.
5. CURBING WILL BE PLACED AT THE EDGE OF ALL PAVEMENT, AS SHOWN ON THE PLANS.
6. CONTRACTOR TO PROVIDE A 1/2" TO 1" BITUMINOUS EXPANSION JOINT MATERIAL WITH SEALER AT ABUTMENT OF CONCRETE AND OTHER MATERIAL, CONTRACTOR TO PROVIDE A 1'(W) RIBBON CURB AT THE ABUTMENT OF SPECIALTY PAVEMENT AND ASPHALT; REFER TO PLANS.
7. ALL UNPAVED DISTURBED AREAS WITHIN PUBLIC RIGHT OF WAY SHALL BE SODDED UNLESS ADDRESSED SPECIFICALLY ON LANDSCAPE PLAN. ALL OTHER AREAS NOT SPECIFICALLY ADDRESSED ON LANDSCAPE PLANS MUST BE STABILIZED AT THE CONCLUSION OF EARTH DISTURBING ACTIVITIES. CONTRACTOR MAY SEED & MULCH SLOPES FLATTER THAN 12:1 BUT IS RESPONSIBLE FOR ACHIEVING STABILIZATION FREE OF WASH-OUTS UNTIL FINAL ACCEPTANCE BY OWNER ANY REGULATORY AGENCY HAVING JURISDICTION.
8. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING APPLICABLE CONSTRUCTION MATERIAL TESTING AND SUBMITTING TESTING TO OWNER'S ENGINEER ON A WEEKLY BASIS. TESTS ARE REQUIRED PURSUANT TO THE TESTING SCHEDULE REQUIRED BY THE REGULATORY AGENCY HAVING JURISDICTION OVER THIS WORK. UPON THE COMPLETION OF THIS WORK, GEOTECHNICAL ENGINEER MUST SUBMIT CERTIFICATIONS TO THE OWNER'S ENGINEER STATING THAT ALL REQUIREMENTS HAVE BEEN MET.
9. A QUALIFIED TESTING LABORATORY SELECTED BY THE OWNER SHALL PERFORM ALL MATERIALS TESTING NECESSARY TO ASSURE COMPLIANCE OF THE IN PLACE MATERIALS AS REQUIRED BY THESE PLANS AND THE VARIOUS AGENCIES. SHOULD ANY RETESTING BE REQUIRED DUE TO THE FAILURE OF ANY TESTS TO MEET THE REQUIREMENTS, THE CONTRACTOR WILL BEAR ALL COSTS OF SAID RETESTING.
10. MIXING IN PLACE OF SOIL CEMENT WILL NOT BE ALLOWED.
11. CONTRACTOR TO FINISH ALL EXPOSED BACK OF CURB.
12. COMPACTED SUB-GRADE SHALL BE MECHANICALLY MIXED TO THE SPECIFIED DEPTH PRIOR TO GRADING, COMPACTION AND TESTING
13. ALL UNDERGROUND UTILITIES INCLUDING CONDUIT FOR ELECTRICAL, IRRIGATION, CABLE TV AND TELEPHONE CROSSINGS SHALL BE INSTALLED PRIOR TO PAVEMENT CONSTRUCTION. CONTRACTOR TO COORDINATE INSTALLATION OF ANY ADDITIONAL CONDUIT LOCATIONS WITH OWNER.
14. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MORE STRICT OF PASCO COUNTY OR FDOT STANDARDS AND SPECIFICATIONS.
15. ALL CURB CUT RAMPS TO BE CONSTRUCTED PER FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS (FDOT INDEX 304) AND BE ADA COMPLIANT INCLUDING USE OF TRUNCATED DOME TACTILE SURFACE.
16. ALL EARTHWORK, PLACEMENT OF FILL AND PAVEMENT PREPARATION TO CONFORM TO THE MORE STRICT OF THE PASCO COUNTY TECHNICAL SPECIFICATIONS, FDOT STANDARD SPECIFICATIONS, OR THE PROJECT GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
17. EXTRA MATERIAL IS REQUIRED PER FDOT INDEX 205 (SHEET 1 OF 5) AROUND STORM PIPE MEETING COVER CRITERIA OF SAID INDEX.
18. JOINTS OF STORM SEWER SHALL BE STAGGERED FOR CROSSINGS OF THE SANITARY SEWER WITH LESS THAN 18 INCHES OF VERTICAL CLEARANCE SO THAT THE PIPE BELL IS NOT LOCATED AT THE CROSSING.
19. AS A COST SAVINGS MEASURE STORM STRUCTURES WITH MULTIPLE PIPE CONNECTIONS MAY BE OFFSET FROM THE CENTER OF THE STRUCTURE TO REDUCE THE OVERALL STRUCTURE SIZE. CONTRACTOR IS TO COORDINATE OFFSET CONNECTIONS WITH APPROPRIATE SUB CONTRACTORS INCLUDING PROJECT SURVEYOR.
20. POND T.O.B. LINE INDICATES TOP OF BANK; I.E., THE POINT AT WHICH THE SLOPE BEGINS.
21. CONTRACTOR TO UTILIZE SAME PAVEMENT BASE OPTION MATERIAL FOR ALL PAVING WITHIN PROJECT.
22. ALL STORM DRAIN STRUCTURES TO CONFORM THE "FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS FOR DESIGN, CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS ON THE STATE HIGHWAY SYSTEM" MANUAL DATED 2014 OR LATEST EDITION.
23. ALL PROPOSED STORM GRATES, RING & COVERS AND SANITARY SEWER RING & COVERS TO MEET H-20 LOADING RATING. ALL STORM GRATES TO BE HOT DIPPED GALVANIZED RETICULINE STEEL GRATES. ALL EXISTING STRUCTURES TO BE MODIFIED AS REQUIRED TO MEET H-20 LOAD RATING AND ADJUSTED TO MEET PROPOSED GRADE. PRIVATE MANHOLES TO BE LABELED "SANITARY" OR "STORM" AND MANHOLES LOCATED WITHIN PUBLIC RIGHT-OF-WAY OR EASEMENTS SHALL HAVE THE GOVERNING AGENCY MASCOT & LETTERING.
24. STANDARD INDEXES REFER TO THE LATEST EDITION OF THE "FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS FOR DESIGN, CONSTRUCTION MAINTENANCE AND UTILITY OPERATIONS ON THE STATE HIGHWAY SYSTEM". CONTRACTOR SHALL REFER TO SAID INDEX FOR ADDITIONAL DETAILS AND INFORMATION NOT SHOWN ON THESE PLANS.
25. ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE CLASS III (ASTM C-76) UNLESS OTHERWISE NOTED ON PLANS. SUBSTITUTION OF RCP WITH OTHER MATERIAL (PVC, HDPE, POLYPROPYLENE, ETC.) WILL NOT BE PERMITTED.
   - 25.1. IF SPECIFIED, HDPE PIPE SHALL BE SMOOTH INTERIOR, CORRUGATED EXTERIOR, WITH INTEGRAL GASKETED WATER-TIGHT JOINT MEETING ASTM F 477 AND ASTM D 3212.
   - 25.2. IF SPECIFIED, POLYPROPYLENE PIPE (PP) SHALL BE DUAL WALL (SMOOTH INTERIOR, CORRUGATED EXTERIOR) WITH INTEGRAL BELLS MEETING EITHER (ASTM F2736, ASTM F2881, OR AASHTO M330). PIPE SHALL HAVE GASKETED JOINTS MEETING ASTM D3212 REQUIREMENTS (10.8 PSI). SPIGOTS SHALL HAVE INTEGRAL GASKETS MEETING THE REQUIREMENTS OF ASTM F477. PIPE MATERIAL SHALL BE A IMPACT MODIFIED COPOLYMER MEETING THE MATERIAL REQUIREMENTS OF ASTM F2736, SECTION 4, ASTM F2881, SECTION 5 AND AASHTO M330, SECTION 6.1 FOR THE RESPECTIVE DIAMETERS.
   - 25.3. ALL CONNECTIONS BETWEEN FLEXIBLE PIPE AND RIGID CONCRETE STRUCTURES SHALL INCLUDE COMPRESSION GASKET, FLEXIBLE BOOT, GROUTED WATERSTOP, OR OTHER MANUFACTURER APPROVED METHOD TO ACHIEVE WATERTIGHT PERFORMANCE.
   - 25.4. ALL FLEXIBLE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. CONTRACTOR SHALL PROVED ENGINEER OF RECORD A COPY OF MATERIAL TEST LAB REPORTS FOR ALL BACKFILL MATERIAL AND DENSITY TESTS PRIOR TO LAMPING / INSPECTING THE STORM SYSTEM. ANY SEGMENTS WITHOUT ADEQUATE DOCUMENTATION SHALL BE REMOVED AND REINSTALLED AT THE CONTRACTOR'S EXPENSE.
26. PIPE LENGTHS SHOWN ARE APPROXIMATE AND TO CENTER OF DRAINAGE STRUCTURE. ALL PIPE LENGTHS INCLUDE END TREATMENT (FES & MES). CONTRACTOR SHALL VERIFY ALL QUANTITIES IN SUBMITTAL OF BID, AND INFORM ENGINEER OF ANY DISCREPANCIES.
27. ALL STORM DRAINAGE PIPING SHALL BE SUBJECT TO A VISUAL INSPECTION BY THE OWNER'S ENGINEER PRIOR TO THE PLACEMENT OF BACK FILL. CONTRACTOR TO NOTIFY THE ENGINEER AND APPLICABLE AGENCIES 48 HOURS IN ADVANCE TO SCHEDULE INSPECTIONS.
28. THE CONTRACTOR SHALL MAINTAIN AND PROTECT FROM MUD, DIRT, DEBRIS, ETC. THE STORM DRAINAGE SYSTEM UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE CONTRACTOR MAY BE REQUIRED TO RECLEAN PIPES AND INLETS FOR THESE PURPOSES.
29. ALL MITERED END SECTIONS ON SIDE DRAIN PIPES AT DRIVEWAY ENTRANCES TO FDOT ROADWAYS MUST BE IN ACCORDANCE WITH INDEX NO. 273.
30. LIMEROCK AND COMPACTED BASE MUST BE REMOVED FROM ALL LANDSCAPE AREAS.
31. SITE CONTRACTOR SHALL COORDINATE WITH LANDSCAPE CONTRACTOR REGARDING BACKFILL WITHIN LANDSCAPE ISLANDS. BACKFILL VOLUME TO BE ADJUSTED TO ACCOUNT FOR ADMIXTURE REQUIREMENTS SHOWN ON LANDSCAPE PLANS.
32. LANDSCAPE BEDS TO BE FINE GRADED TO PROVIDE POSITIVE DRAINAGE PRIOR TO INSTALLATION OF PLANT MATERIAL
33. TERMINATION OF BOTH FDOT TYPE "F" AND 6" VERTICAL CURB SHALL INCLUDE A 3' TRANSITION TO FLUSH UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS.



TYPE 2 LOCAL PUBLIC ROADWAY SECTION

DESIGN SPEED 25 MPH, Δ_{MAX} = 1.10%, MIN K_{CREST} = 19, MIN K_{SAG} = 26

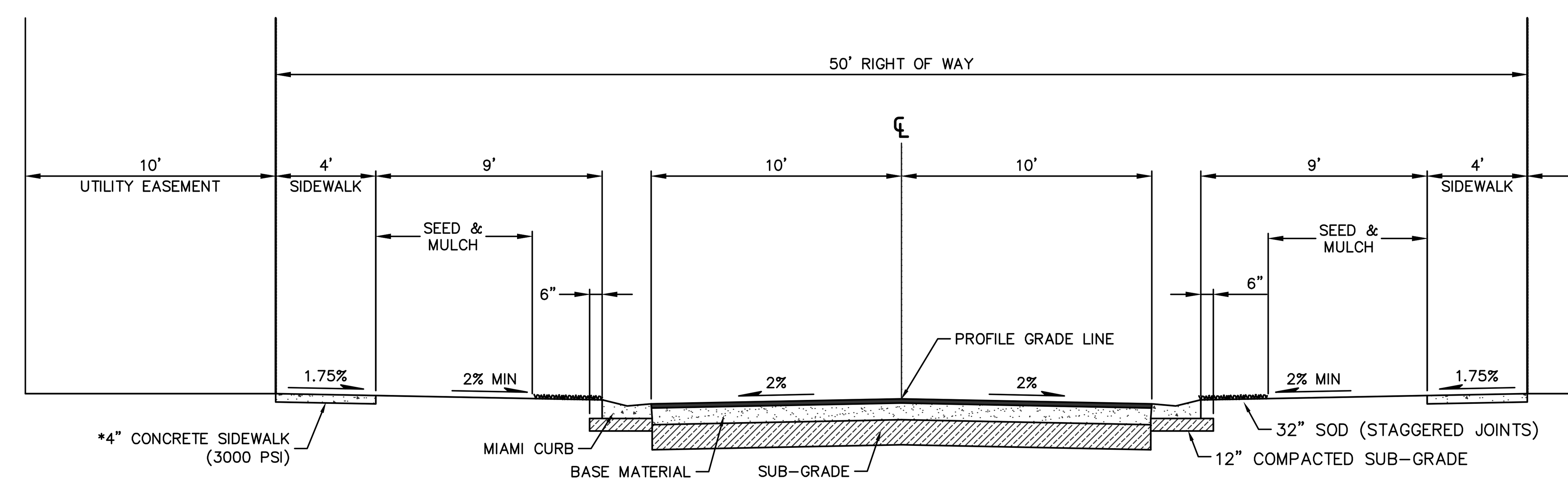
ROAD A



TYPE 3 LOCAL PUBLIC ROADWAY SECTION

DESIGN SPEED 20 MPH, Δ_{MAX} = 1.20%, MIN K_{CREST} = 10, MIN K_{SAG} = 17

ROAD H

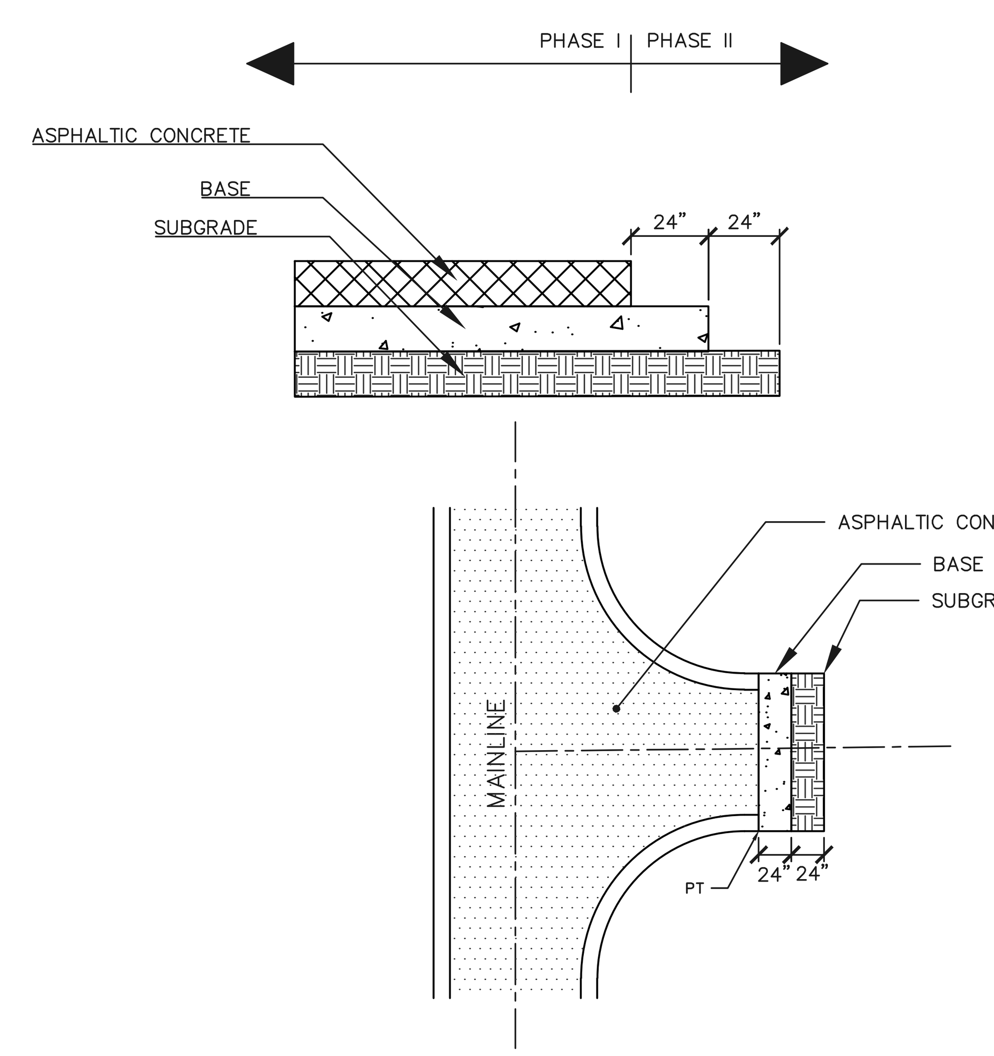


* CONCRETE SIDEWALK ADJACENT TO COMMON AREA TO BE 6" THICK AND CONSTRUCTED BY SITE CONTRACTOR (SEE NOTE SHEET C-07)

TYPE 4 LOCAL PUBLIC ROADWAY SECTION

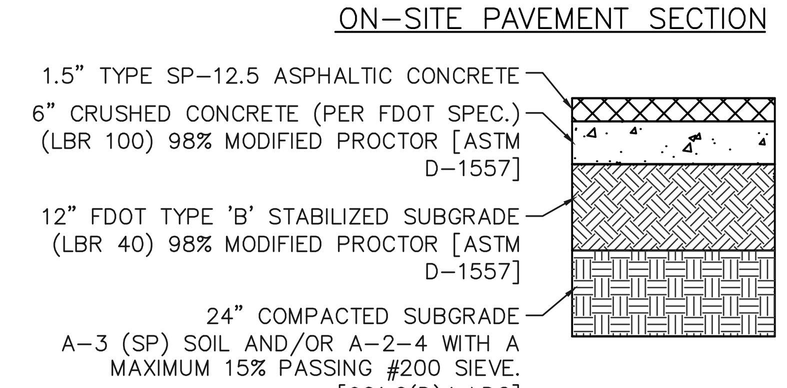
DESIGN SPEED 15 MPH, Δ_{MAX} = 1.30%, MIN K_{CREST} = 5, MIN K_{SAG} = 10

ROAD B, ROAD C, ROAD D, ROAD E, ROAD F, ROAD G

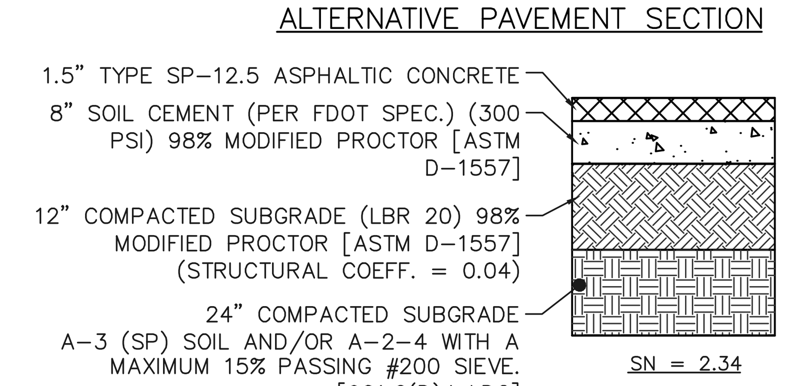


PHASE LINE PAVEMENT TRANSITION

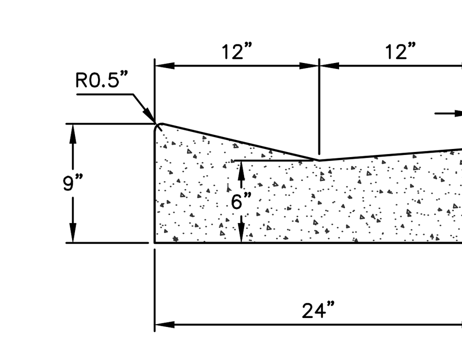
ON-SITE PAVEMENT SECTION



ALTERNATIVE PAVEMENT SECTION



PROPOSED ON-SITE ROADWAY DESIGN	
MIN. SN REQUIRED FOR RES-3 LAND USE = 2.34 PER [901.6(D)4 LDC]	
LAYER COEFFICIENTS:	THICKNESS
0.44 – TYPE SP-12.5 SURFACE COURSE	1.5"
0.15 – CRUSHED CONCRETE BASE COURSE (LBR 100)	6"
0.08 – TYPE B STABILIZED SUBGRADE (LBR 40)	12"
SN = (0.44*1.5) + (0.15*6) + (0.08*12) = 2.52 2.52 ≥ 2.34	



MIAMI CURB

Printed: August 24, 2015 (11:07am EST) by: pcarballo
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NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF	CHECKED BY: DBF
DRAWN BY: DBF/PGC	SCALE: NTS
PROJECT NUMBER 6216-005	PLAN DATE AUG 2015

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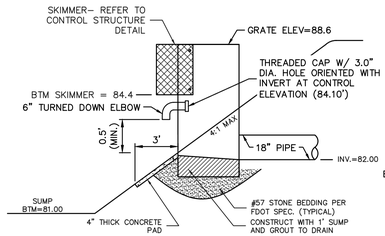
PREPARED FOR
CWES XXI, LLC

SEAL
DAVID B. FLEEMAN, P.E.
License Number 55362

SHEET TITLE
TYPICAL ROADWAY SECTIONS & NOTES

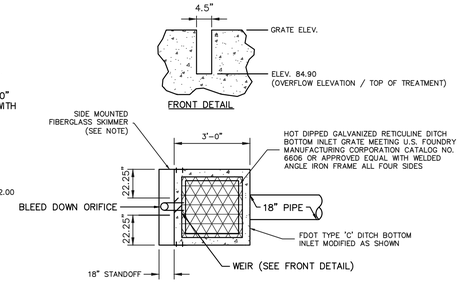
PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-34



POND 310 CONTROL STRUCTURE

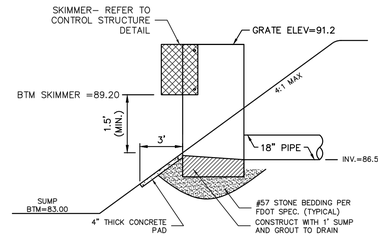
ST–302 (DS–310–NG1260) N.T.S.



MODIFIED FDOT "C" INLET

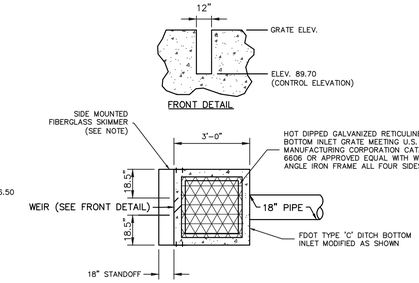
N.T.S.

NOTES:
- STRUCTURE TO COMPLY WITH FDOT INDEX 232
- FIBERGLASS SKIMMER TO MEET ENVIRONMENTAL COMPOSITES INC. CHANNEL SIDE MOUNT SPECIFICATION AND DETAILS. SKIMMER THICKNESS 3/16" AND COLORED DISAPPEARING GREEN.



POND 510 CONTROL STRUCTURE

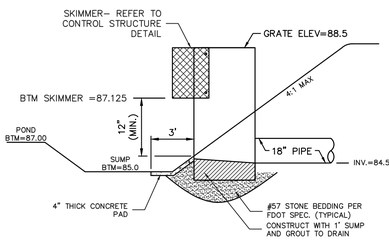
ST–147 (DS–510–110) N.T.S.



MODIFIED FDOT "C" INLET

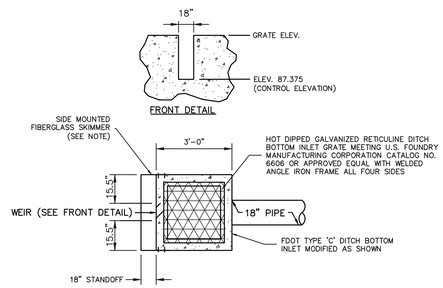
N.T.S.

NOTES:
- STRUCTURE TO COMPLY WITH FDOT INDEX 232
- FIBERGLASS SKIMMER TO MEET ENVIRONMENTAL COMPOSITES INC. CHANNEL SIDE MOUNT SPECIFICATION AND DETAILS. SKIMMER THICKNESS 3/16" AND COLORED DISAPPEARING GREEN.



POND 410 CONTROL STRUCTURE

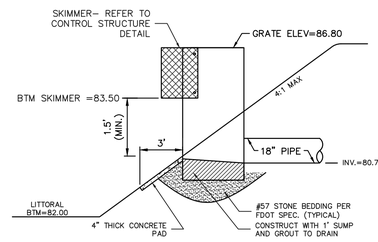
ST–402 (DS–410–NF0180) N.T.S.



MODIFIED FDOT "C" INLET

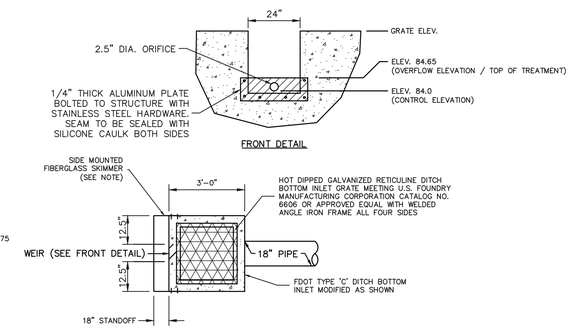
N.T.S.

NOTES:
- STRUCTURE TO COMPLY WITH FDOT INDEX 232
- FIBERGLASS SKIMMER TO MEET ENVIRONMENTAL COMPOSITES INC. CHANNEL SIDE MOUNT SPECIFICATION AND DETAILS. SKIMMER THICKNESS 3/16" AND COLORED DISAPPEARING GREEN.



POND 610 CONTROL STRUCTURE

ST–602 (DS–610–NF0200) N.T.S.



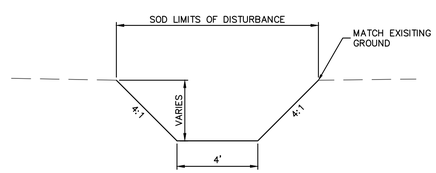
MODIFIED FDOT "C" INLET

N.T.S.

NOTES:
- STRUCTURE TO COMPLY WITH FDOT INDEX 232
- FIBERGLASS SKIMMER TO MEET ENVIRONMENTAL COMPOSITES INC. CHANNEL SIDE MOUNT SPECIFICATION AND DETAILS. SKIMMER THICKNESS 3/16" AND COLORED DISAPPEARING GREEN.

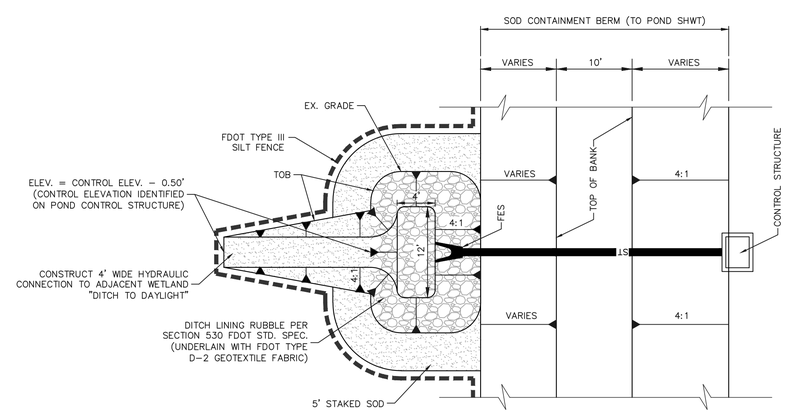
Littoral Shelf Planting Schedule (Optional)				
Depth Below Control Elev.	Scientific Name	Common Name	Spacing (ft. o.c.)	Size
0 – 1.25'	*Eleocharis spp.*	spikerush	4	bareroot
1.25' – 2.25'	*Pontederia cordata*	pickerelweed	4	bareroot
2.25' – 3.5'	*Nymphaea odoata*	fragrant water lily	7	bareroot

NOTE:
1. NATIVE, DESIRABLE PLANTS PROVIDING SAME FUNCTION AS THOSE LISTED MAY BE SUBSTITUTED AS DESIRED/NECESSARY.
2. PERMITTEE MAY ELECT TO IMPLEMENT MAINTENANCE PROGRAM TO REMOVE UNDESIRABLE PLANTS WITHIN STORMWATER POND AND ENCOURAGE GROWTH OF DESIRABLE PLANTS.



HYDRAULIC CONNECTION

NTS



OUTFALL SPREADER SWALE DETAIL

N.T.S.

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF | CHECKED BY: DBF | PROJECT NUMBER: 6216-005
DRAWN BY: DBF/PGC | SCALE: NTS | PLAN DATE: AUG 2015

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PREPARED FOR

CWES XXI, LLC

SEAL

DAVID R. FLEEMAN, P.E.
License Number 45362

SHEET TITLE

PAVING, GRADING, & DRAINAGE DETAILS

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-35

Printed: August 24, 2015 (11:07am EST) by: pcarbolio
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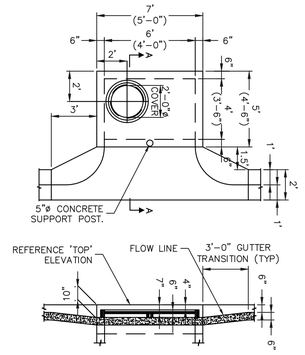
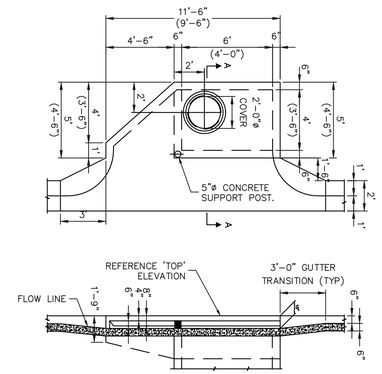
STORM INLET NOTES

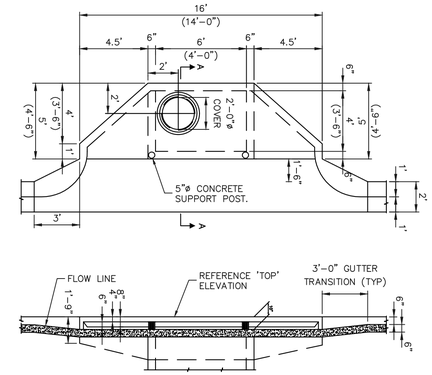
1. INLETS MAY BE PLACED ADJACENT TO OR SET BACK FROM MIAMI CURB WITH THE PROPER TRANSITIONS INDICATED IN THE DETAILS.
2. THE FINISHED GRADE AND SLOPE OF THE INLET TOPS ARE TO CONFORM WITH THE FINISHED CROSS SLOPE AND GRADE OF THE PROPOSED SIDEWALK AND/OR BORDER.
3. WHEN THE INLETS ARE TO BE CONSTRUCTED ON A CURVE, REFER TO THE PLANS TO DETERMINE THE RADIUS AND, WHERE NECESSARY, MODIFY THE INLET DETAILS ACCORDINGLY. BEND STEEL WHEN NECESSARY.
4. ALL STEEL IN INLET TOP SHALL HAVE 1 1/2" MINIMUM COVER UNLESS OTHERWISE SHOWN. INLET TOPS SHALL BE EITHER CAST-IN-PLACE OR PRECAST CONCRETE.
5. FOR STRUCTURE BOTTOMS AND SUPPLEMENTAL DETAILS SEE FDOT STANDARD INDEX NO'S. 200 AND 201.
6. ONLY ROUND CONCRETE SUPPORT POSTS WILL BE ACCEPTABLE.
7. INLETS ADJACENT TO MIAMI CURB ARE DESIGNED FOR USE WITH STANDARD CURB AND GUTTER TYPES E AND F, PER FDOT STANDARD INDEX 300. LOCATE INLET OUTSIDE OF PEDESTRIAN CROSSWALKS.
8. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH, F'C = 4000 PSI.
9. REINFORCING STEEL SHALL BE GRADE 60 DEFORMED BARS, PER ASTM A615.
10. WHEN USING INLETS SET BACK FROM THE MIAMI CURB, THE SIDEWALK SHALL BE LOCATED BEHIND THE BACK OF BOX.
11. THESE CURB INLETS HAVE BEEN APPROVED BY PASCO COUNTY FOR USE ON NON-FUNCTIONALLY CLASSIFIED ROADWAYS SUCH AS LOCAL STREETS AND SUBDIVISION COLLECOT ROADWAYS. IT DOES NOT CONFORM TO THE FLORIDA DEPARTMENT OF TRANSPORTATION MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCITON, AND MAINTENANCE FOR STREETS AND HIGHWAYS; THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION; OR THE DESIGN STANDARDS FOR DESIGN, CONSTRUCTION, MAINTENANCE, AND UTILITY OPERATIONS ON THE STATE HIGHWAY SYSTEM. HOWEVER, WE HEREBY CERTIFY THAT IT IS SUITABLE FOR USE AT THE LOCATIONS DEPICTED HEREIN.



TYPE I INLET
(OFFSET FROM CURB)
PLAN AND ELEVATION



TYPE II INLET
(OFFSET FROM CURB)
PLAN AND ELEVATION



TYPE III INLET
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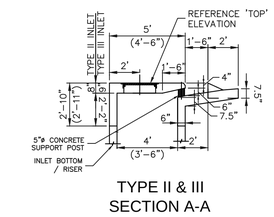
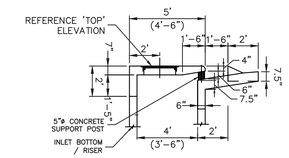
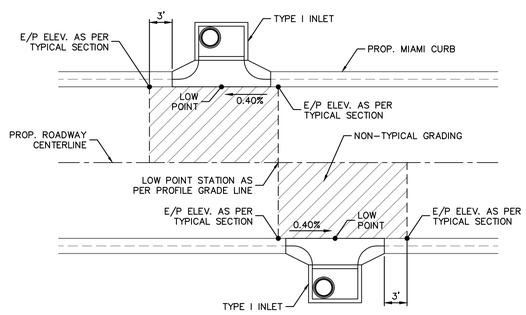
PLAN AND ELEVATION



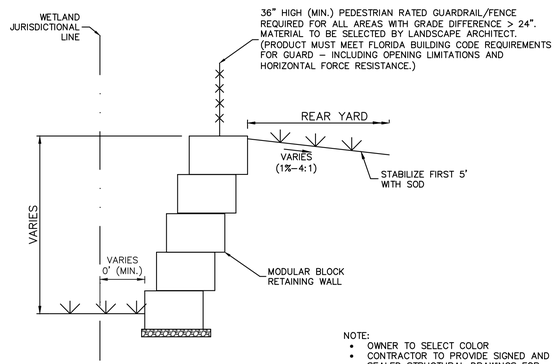
TYPE II & III
SECTION A-A



TYPE I
SECTION A-A

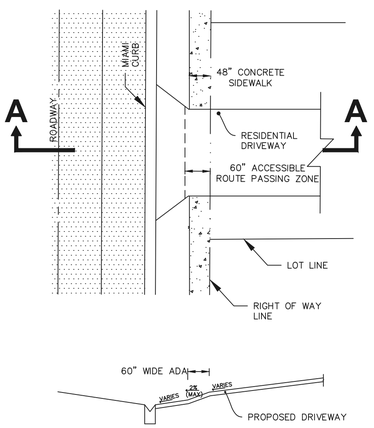


NON-TYPICAL SAG ROADWAY GRADING DETAIL



NOTE:
- OWNER TO SELECT COLOR
- CONTRACTOR TO PROVIDE SIGNED AND SEALED STRUCTURAL DRAWINGS FOR SHOP DRAWING REVIEW.

RETAINING WALL DETAIL



SECTION A-A

SIDEWALK DETAIL

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF | CHECKED BY: DBF | PROJECT NUMBER: 6216-005
DRAWN BY: DBF/PGC | SCALE: NTS | PLAN DATE: AUG 2015

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PREPARED FOR
CWES XXI, LLC

SEAL
DAVID B. FLEEMAN, P.E.
License Number 75362

SHEET TITLE
PAVING, GRADING, & DRAINAGE DETAILS

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-36

Printed: August 24, 2015 (11:07am EST) by: pcarballo
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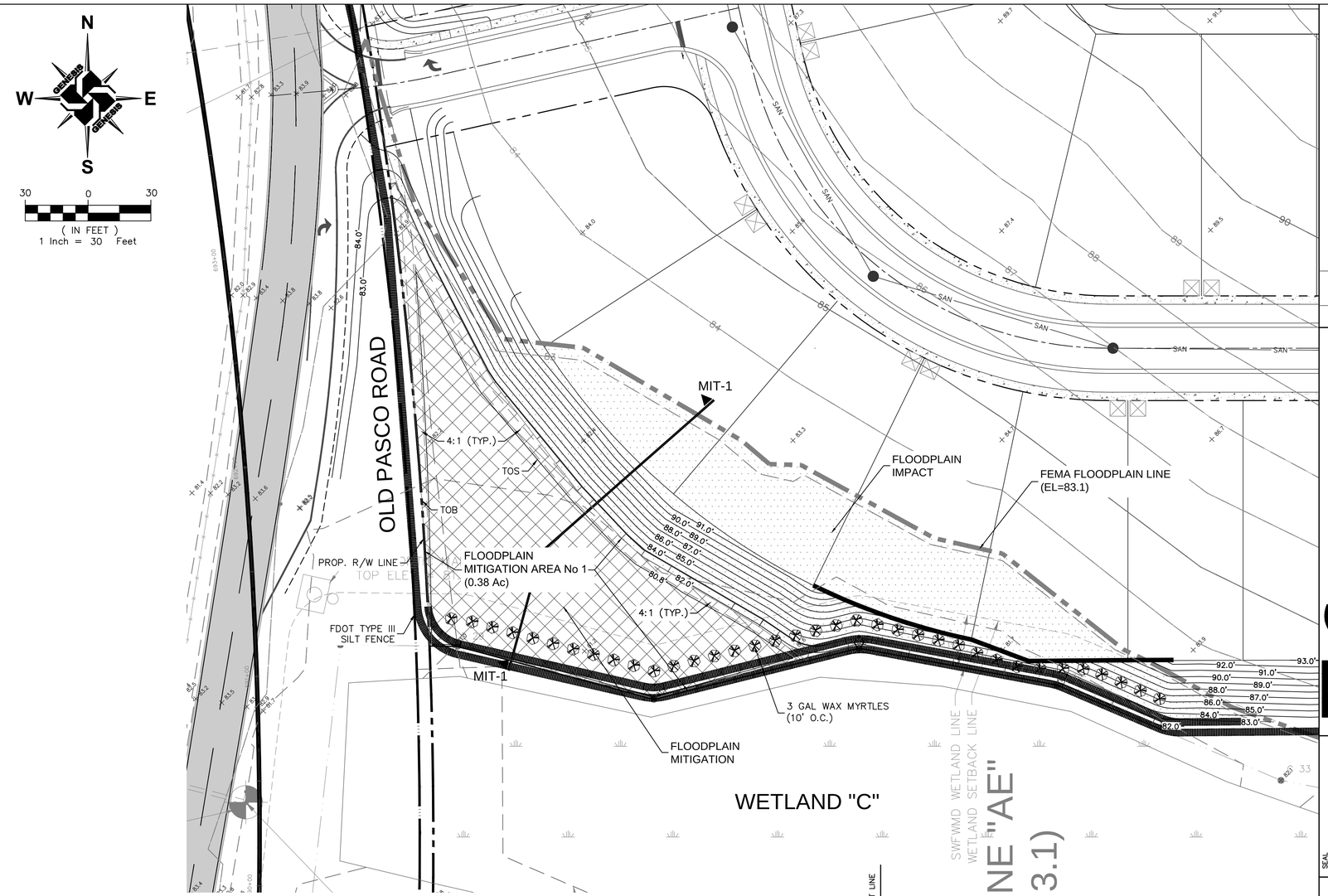
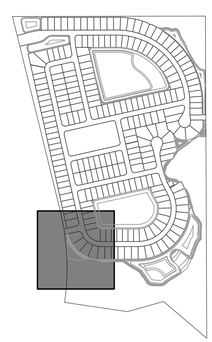
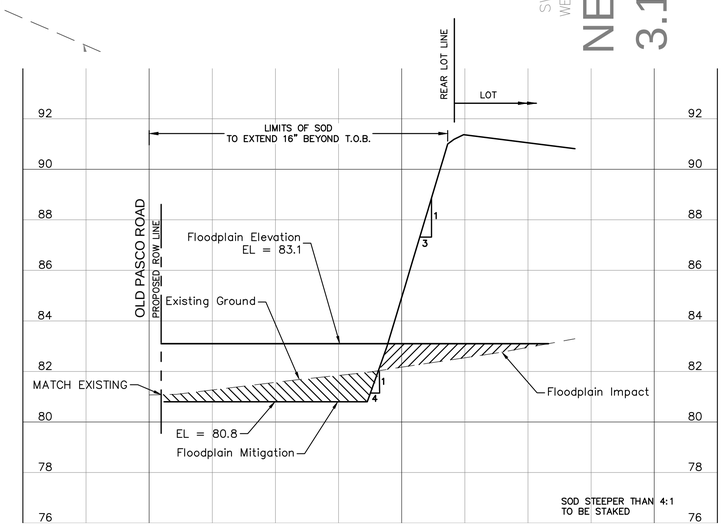




SUMMARY TABLE

FLOODPLAIN IMPACT = 494 CY
FLOODPLAIN MITIGATION = 508 CY
NEW EXCESS MITIGATION = 14 CY



NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: 1" = 30'
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

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PREPARED FOR:
CWES XXI, LLC

SEAL
DAVID R. FLEEMAN, P.E.
License Number 45362

SHEET TITLE
FEMA FLOOD PLAIN ENCROACHMENT & MITIGATION

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-37

Printed: August 24, 2015 (11:08am EST) by: pcarbello
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SANITARY SEWER NOTES

1. SANITARY SEWERS, FORCE MAINS AND STORM SEWERS SHOULD ALWAYS CROSS UNDER WATER MAINS. SANITARY SEWERS, FORCE MAINS AND STORM SEWERS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE WHENEVER POSSIBLE. WHERE SANITARY SEWERS, FORCE MAINS AND STORM SEWERS MUST CROSS A WATER MAIN WITH LESS THAN 18 INCHES VERTICAL DISTANCE, BOTH THE SEWER AND THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) AT THE CROSSING. (DIP IS NOT REQUIRED FOR STORM SEWERS IF IT IS NOT AVAILABLE IN THE SIZE PROPOSED). SUFFICIENT LENGTHS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE LEAK FREE AND MECHANICALLY RESTRAINED. A MINIMUM VERTICAL CLEARANCE OF 6 INCHES MUST BE MAINTAINED AT THE CROSSING. ALL CROSSINGS SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING (PIPES CENTERED ON THE CROSSING). WHERE A NEW PIPE CONFLICTS WITH AN EXISTING PIPE, THE NEW PIPE SHALL BE CONSTRUCTED OF DIP AND THE CROSSING SHALL BE ARRANGED TO MEET THE REQUIREMENTS ABOVE.

2. A MINIMUM 10–FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ANY TYPE OF SEWER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10–FOOT HORIZONTAL SEPARATION, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER OR FORCE MAIN AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER. WHERE IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF 18 INCHES IN PARALLEL INSTALLATIONS, THE WATER MAIN SHALL BE CONSTRUCTED OF DIP AND THE SEWER OR THE FORCE MAIN SHALL BE CONSTRUCTED OF DIP (IF AVAILABLE IN THE SIZE PROPOSED) WITH A MINIMUM VERTICAL DISTANCE OF 6 INCHES. THE WATER MAIN SHOULD ALWAYS BE ABOVE THE SEWER. JOINTS ON THE WATER MAIN SHALL BE LOCATED AS FAR APART AS POSSIBLE FROM THE JOINTS ON THE SEWER OR FORCE MAIN (STAGGERED JOINTS).

3. ALL SANITARY SEWER MAINS, LATERALS AND FORCE MAINS SHALL HAVE A MINIMUM OF 36 INCHES OF COVER.

4. ON–SITE PVC GRAVITY SANITARY SEWER PIPE:

4.1. SHALL BE MADE OF GREEN PVC MATERIAL HAVING A CELL CLASSIFICATION OF 12454 B, 12454 C OR 13354 B AS DEFINED IN ASTM D–1784

4.2. SHALL CONFORM TO THE REQUIREMENTS OF SDR 26 (ASTM D3034).

4.3. SHALL INCLUDE ELASTOMERIC GASKET JOINTS MEETING ASTM F477

4.4. BEDDING & BACKFILL MATERIAL AS WELL AS INSTALLATION TO CONFORM TO PIPE MANUFACTURER'S REQUIREMENTS.

5. ALL ON SITE DUCTILE IRON PIPE SHALL BE CLASS 52 AND SHALL RECEIVE INTERIOR AND EXTERIOR BITUMINOUS COATING IN ACCORDANCE WITH ANSI A 21.6, A 21.8, OR A 21.51.

6. ALL PVC SANITARY FORCE MAIN SHALL BE CONSTRUCTED BY AWWA C900, DR18, GREEN PVC PIPE.

6.1. RESTRAINT OF SANITARY SEWER FORCE MAIN SHALL BE IN ACCORDANCE WITH THE APPROPRIATE RESTRAINT TABLES SHOWN HEREON IN THESE PLANS.

6.2. RESTRAINING JOINTS FOR MECHANICAL JOINT FITTINGS SHALL CONFORM TO REQUIREMENTS OF ANSI / AWWA C111 / A21.11.

7. ~~POINTS OF CONNECTION FOR THE SANITARY SEWER LINES ARE TO BE COORDINATED WITH THE BUILDING PLUMBING PLANS. SANITARY SERVICE CONNECTION LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE.~~

8. PRIOR TO COMMENCING WORK WHICH REQUIRES CONNECTING NEW SANITARY SEWER LINES TO EXISTING LINES OR APPURTENANCES, THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES NEAR THE POINT OF CONNECTION AND NOTIFY OWNER'S ENGINEER OF ANY CONFLICTS OR DISCREPANCIES WITH DESIGN INFORMATION SHOWN IN THESE PLANS. CONTRACTOR SHALL NOTIFY ENGINEER AND THE APPLICABLE AGENCIES AT LEAST 48 HOURS IN ADVANCE OF SCHEDULED WORK.

9. AT LEAST 3 WEEKS PRIOR TO CONNECTION TO THE EXISTING SANITARY FORCE MAIN, CONTRACTOR SHALL NOTIFY THE OWNER'S ENGINEER AND THE APPLICABLE AGENCIES, DEPARTMENT OF SANITARY SEWERS FIELD ENGINEERING OFFICE AND SUPPLY THEM WITH CONNECTION DETAIL, THE CONTRACTOR'S NAME, STARTING DATE PROJECTED SCHEDULE AND OTHER INFORMATION AS REQUIRED. THE CONTRACTOR SHALL PERFORM AN INFILTRATION/EXFILTRATION TEST ON ALL GRAVITY SEWERS AND A PRESSURE TEST ON ALL FORCE MAINS (AS APPLICABLE) IN ACCORDANCE TO APPLICABLE AGENCIES REGULATIONS. SAID TESTS ARE TO BE CERTIFIED BY THE ENGINEER OF RECORD AND SUBMITTED TO THE APPLICABLE AGENCIES' DEPARTMENT OF SANITARY SEWERS FOR APPROVAL. THE SCHEDULING, COORDINATION AND NOTIFICATION TO ALL PARTIES IS THE CONTRACTOR'S RESPONSIBILITY.

10. ONE OR MORE OF THE FOLLOWING CERTIFICATES/SHOP DRAWINGS, DEPENDING ON THE TYPE OF CONNECTION, WILL BE REQUIRED.
    a. DIP/PVC CERTIFICATE OF MANUFACTURE.
    b. JACKING PIT DETAIL.
    c. MANHOLE SHOP DRAWINGS AND STRENGTH REPORT.
    d. CRUSHED STONE SUBMITTAL.
    e. FRAME AND COVER SHOP DRAWINGS.
    f. VALVE SHOP DRAWING.
    g. FLEXIBLE COUPLING SHOP DRAWINGS.
    h. MANHOLE DROP
    i. CASING PIPE CERTIFICATE.
    j. CONNECTION DETAIL.

11. THE CONTRACTOR SHALL PERFORM A LEAKAGE TEST (INFILTRATION, EXFILTRATION OR AIR PRESSURE), A TELEVISION INSPECTION, AND A MANDREL (GO, NO GO) TEST ON ALL GRAVITY SEWERS IN ACCORDANCE WITH THE ENGINEER'S REQUIREMENTS AND THE REGULATORY AGENCY HAVING JURISDICTION. COORDINATION OF TESTING AND NOTIFICATION OF ALL PARTIES IS THE CONTRACTOR'S RESPONSIBILITY.

12. ALL SANITARY SEWER PIPING SHALL BE SUBJECT TO A VISUAL INSPECTION BY THE OWNER'S ENGINEER PRIOR TO THE PLACEMENT OF BACK FILL. CONTRACTOR TO NOTIFY THE ENGINEER AND APPLICABLE AGENCIES 48 HOURS IN ADVANCE TO SCHEDULE INSPECTIONS.

13. ALL MATERIALS AND WORKMANSHIP SHALL MEET THE REQUIREMENTS OF THE GOVERNMENTAL AGENCY HAVING JURISDICTION OVER THE WORK.

14. THE SANITARY SEWER COLLECTION SYSTEM SHALL NOT BE PLACED INTO SERVICE UNTIL APPROVAL FOR CONNECTION IS OBTAINED FROM FDEP. THE CONTRACTOR SHALL SUBMIT TO THE OWNER'S ENGINEER SANITARY SEWER SYSTEM AS–BUILT INFORMATION AT LEAST SIX WEEKS PRIOR TO ANTICIPATED DATE OF CERTIFICATE OF COMPLETION APPLICATION. FAILURE TO OBTAIN FDEP APPROVAL PRIOR TO PLACING THE SYSTEM IN OPERATION MAY RESULT IN SUBSTANTIAL FINES.

15. ALL PROPOSED MANHOLES LOCATED DOWNSTREAM OF A FORCE MAIN DISCHARGE POINT SHALL BE COATED WITH AN ACID RESISTANT COATING MATERIAL MEETING PASCO COUNTY AND FDEP CRITERIA.

WATER DISTRIBUTION NOTES

1. ALL WATER SERVICE LINES THREE (3) INCHES IN DIAMETER AND SMALLER SHALL BE CONSTRUCTED OF HIGH–DENSITY POLYETHYLENE (HDPE) TUBING MEETING PASCO COUNTY TECHNICAL SPECIFICATIONS.

2. ALL DIP PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA STANDARD C–151. IN AREAS WHERE THE SOIL IS DETERMINED TO BE CORROSIVE OR HIGH GROUND WATER IS EXPECTED, THE PIPE WILL BE INSTALLED IN A LOOSE POLYETHYLENE ENCASEMENT NOT LESS THAN 8 MILS THICK AND INSTALLED IN ACCORDANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE SPECIFICATION A21.5.

3. ALL POTABLE WATER PVC PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA STANDARD C–900, PRESSURE CLASS 150, DR 18, COLORED BLUE. ALL FIRE WATER PVC PIPE TO BE PRESSURE CLASS 200, DR14.

4. PVC PIPE WITHIN PROPERTY BOUNDARY SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE AGENCIES STANDARDS.

5. CONTRACTOR SHALL FURNISH AND INSTALL 4" METAL DETECTABLE IDENTIFICATION TAPE ALONG THE FULL LENGTH OF THE PVC PIPE TRENCH 18 INCHES BELOW THE FINISHED GRADE.

6. CONTRACTOR SHALL INSTALL A CONTINUOUS RUN OF 14 GAUGE LOCATOR WIRE ATTACHED TO THE PVC WATER MAIN. THE NEW LOCATOR WIRE MUST PASS A CONTINUITY TEST WHICH SHALL BE PERFORMED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

7. ALL WATER MAINS SHALL HAVE A MINIMUM 36" COVER.

8. A SHOCK PAD IS TO BE INSTALLED OVER THE WATER MAIN WHENEVER THE DEPTH OF COVER IS LESS THAN THE MINIMUM 36".

9. BENDS SHALL BE INSTALLED ON WATER MAIN, AS NECESSARY, TO MAINTAIN PROPER ALIGNMENT. PIPE DEFLECTION SHALL BE IN ACCORDANCE WITH AWWA C–600, LATEST EDITION.

10. ALL PVC PIPE JOINTS SHALL BE PUSH–ON, MEETING ASTM D–3139. ALL GASKETS SHALL MEET ASTM F–477.

11. RESTRAINT OF HORIZONTAL PVC PIPE FITTINGS SHALL BE IN ACCORDANCE WITH THE APPROPRIATE RESTRAINT TABLES SHOWN HEREON IN THESE PLANS.

12. PVC RESTRAINT FITTINGS SHALL BE EQUAL OR BETTER THAN UNIFLANGE 1350–C SERIES, EBAA IRON, INC. 1500 SERIES, OR JCM INDUSTRIES MODEL 620. ALL RESTRAINT FITTINGS SHALL HAVE A BITUMINOUS COATING.

13. SERVICE SADDLES SHALL BE USED FOR TAPPING ALL PVC WATER MAINS. SADDLES SHALL BE EQUAL TO OR BETTER THAN FORD FC202 OR JCM 406. ALL TAPS SHALL BE PERFORMED USING SHELL CUTTERS.

14. ALL PROPOSED WATER MAIN INSTALLATION SHALL MEET SEPARATION CRITERIA AS STATED IN SANITARY SEWER NOTES 1 & 2.

15. ALL SUBSURFACE CONSTRUCTION SHALL COMPLY WITH THE "TRENCH SAFETY ACT." THE CONTRACTOR SHALL INSURE THAT THE METHOD OF TRENCH PROTECTION AND CONSTRUCTION IS IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS.

16. CONSTRUCTION, MATERIALS, AND WORKMANSHIP TO CONFORM WITH THE LATEST APPLICABLE AGENCIES SPECIFICATIONS.

17. CONTRACTOR TO INSTALL TEMPORARY BLOW–OFF ASSEMBLIES AT THE TERMINATION OF THE WATER AND FIRE SERVICE LINES FOR FLUSHING, DISINFECTION AND TESTING PURPOSES.

18. CONTRACTOR TO VERIFY THE LOCATIONS AND ELEVATIONS OF ALL UTILITY CONNECTIONS PRIOR TO ORDERING MATERIALS OR CASTING STRUCTURES. VARIATIONS AFFECTING THE DESIGN OF THE SYSTEM SHOULD BE REPORTED TO THE ENGINEER IMMEDIATELY.

19. FOLLOWING THE COMPLETION OF CONSTRUCTION AND REQUIRED TESTING, THE CONTRACTOR SHALL REMOVE THE TEMPORARY BLOW–OFF ASSEMBLIES AND REPLACE WITH PERMANENT BLOW–OFFS IN ACCORDANCE WITH APPLICABLE AGENCIES DETAILS.

20. CONFLICTS BETWEEN WATER AND STORM OR SANITARY SEWER TO BE RESOLVED BY ADJUSTING THE WATER LINES AS NECESSARY.

21. ALL COMPONENTS OF THE DOMESTIC WATER SYSTEM, INCLUDING FITTINGS, HYDRANTS, CONNECTIONS, AND VALVES SHALL REMAIN UNCOVERED UNTIL PROPERLY INSPECTED AND ACCEPTED BY THE OWNER'S ENGINEER AND APPLICABLE AGENCIES. DOMESTIC SYSTEM PRESSURE TESTS TO BE CONDUCTED FOR TWO HOURS AT 150 PSI IN ACCORDANCE WITH AWWA C600–87 STANDARDS. CONTRACTOR TO NOTIFY OWNER'S ENGINEER AND APPLICABLE AGENCIES INSPECTORS 72 HOURS IN ADVANCE OF PERFORMING TESTS.

22. CONTRACTOR TO PERFORM CHLORINATION AND BACTERIOLOGICAL SAMPLING PURSUANT TO AGENCY REQUIREMENTS AND OBTAIN CLEARANCE OF DOMESTIC WATER SYSTEM (IE: TWO DAYS OF PASSING TESTS AT EACH SAMPLING LOCATION). COPIES OF ALL BACTERIOLOGICAL TESTS TO BE SUBMITTED TO OWNER'S ENGINEER WITHIN 3 DAYS AFTER TESTING.

23. THE LOCATION OF ALL NEWLY INSTALLED FIRE HYDRANTS SHALL BE IDENTIFIED WITH A BLUE REFLECTIVE PAVEMENT MARKER INSTALLED ON THE ROADWAY, PERPENDICULAR TO THE FIRE HYDRANT. THE REFLECTIVE MARKER WILL BE LOCATED IN THE CENTER OF THE LANE CLOSEST TO THE HYDRANT

24. ALL PIPE, PIPE FITTINGS, PIPE JOINT PACKING AND JOINTING MATERIALS, VALVES, FIRE HYDRANTS, AND METERS INSTALLED UNDER THIS PROJECT SHALL CONFORM TO APPLICABLE AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARDS PER FAC 62–555.320(21)(b), RSWW 8.0, & AWWA STANDARDS AS INCORPORATED INTO FAC 62–555.330 EXCEPT AS ALLOWED UNDER FAC 62–555.320(21)(c).

25. ALL WATER SYSTEM COMPONENTS, EXCLUDING FIRE HYDRANTS, THAT WILL BE INSTALLED UNDER THIS PROJECT AND THAT WILL COME INTO CONTACT WITH DRINKING WATER SHALL CONFORM TO NSF INTERNATIONAL STANDARD 61 AS ADOPTED IN RULE 62–555.335, FAC, OR OTHER APPLICABLE STANDARDS, REGULATIONS, OR REQUIREMENTS REFERENCED IN PARAGRAPH 62–555.320(3)(b), FAC EXCEPT AS ALLOWED UNDER FAC 62–555.320(3)(d).

26. ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT SHALL CONTAIN NO MORE THAN 8.0% LEAD, AND ANY SOLDER OR FLUX USED IN THIS PROJECT SHALL CONTAIN NO MORE THAN 0.2% LEAD PER FAC 62–555.322.

27. ALL RECLAIMED WATER PVC SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA STANDARD C–900, PRESSURE CLASS 150, DR18, COLORED PURPLE.

STANDARD FIRE PROTECTION NOTES

1. ALL PROJECTS MUST COMPLY WITH PASCO COUNTY FIRE HYDRANT ORDINANCE No. 46–51.

2. FIRE HYDRANTS SHALL BE INSTALLED AND IN SERVICE PRIOR TO THE ACCUMULATION OF COMBUSTIBLES.

3. PER THE NATIONAL FIRE PROTECTION ASSOCIATION, NFPA–1, 16.4.3.1.3: WHERE UNDERGROUND WATER MAINS AND HYDRANTS ARE TO BE PROVIDED, THEY SHALL BE INSTALLED, COMPLETED, AND IN SERVICE PRIOR TO CONSTRUCTION WORK.

4. PER NFPA–1, 18.3.4.1: CLEARANCES OF 7.5 FEET IN FRONT OF AND TO THE SIDES OF THE FIRE HYDRANT WITH A 4–FOOT CLEARANCE TO THE REAR MUST BE MAINTAINED AT ALL TIMES.

5. GATED ENTRIES REQUIRE A SIREN OPERATING SYSTEM OR A 3M OPTICOM SYSTEM FOR EMERGENCY ACCESS.

Printed: August 24, 2015 (11:08am EST) by: pcarballo
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REVISIONS

NO.	DATE	DESCRIPTION

DESIGNED BY: DBF
CHECKED BY: DBF
PROJECT NUMBER: 6216-005
DRAWN BY: DBF/PGC
SCALE: NTS
PLAN DATE: AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 00009660 FL LB 0006816 FL LC 26000202

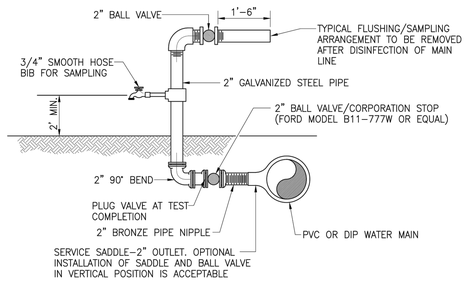
PREPARED FOR
CWES XXI, LLC

SEAL
DAVID B. FLEEMAN, P.E.
License Number 55362

SHEET TITLE
UTILITY NOTES

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-38



CITY OF DUNEDIN
DEPARTMENT OF PUBLIC WORKS & UTILITIES
(727) 298-3300
P.O. BOX 1348
DUNEDIN, FL
34697-1348

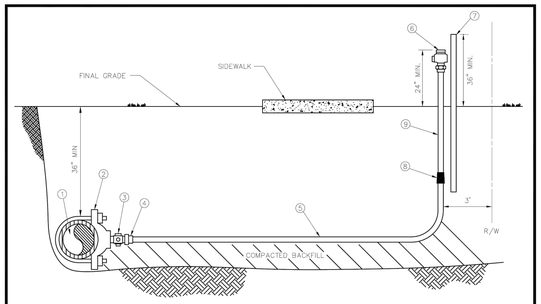
TEMPORARY 2" BLOW-OFF/SAMPLING ARRANGEMENT FOR RAW, RECLAIMED AND POTABLE WATER MAINS DETAIL

FURNISH & INSTALL DETAILS (NTS)

APPROVED BY _____ DATE _____

REVISED _____ JUN 2010

DRAWING No. 21 SHEET 1 OF 1



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	*	PIPE, PVC (DR-18) OR D.I.P.
2	1	SADDLE, SERVICE W/ 1" F.I.P. THREAD
3	1	1" CORPORATION (M.I.P. x COMP.)
4	1	1" INSERT (STAINLESS STEEL)
5	*	1" TUBING, POLYETHYLENE
6	1	3/4" WATER OR 1" REUSE CURB STOP BALL VALVE W/ LOCK WINGS (F.I.P. x COMP.)
7	1	2" x 4" P.T. MARKER STAKE
8	1	1" x 3/4" COUPLING (COMP. x COMP.) WATER ONLY
9	1	3/4" WATER OR 1" REUSE TUBING, POLYETHYLENE 4'

NOTES:
- ALL FITTINGS FOR POLYETHYLENE TUBING ARE BRASS COMPRESSION TYPE.
- A VALVE BOX MAY BE REQUIRED AS SPECIFIED BY THE ENGINEER.
- CURB STOP TO TERMINATE 24" ABOVE GROUND AT R/W LINE.
- REUSE CURB STOPS = 1" / WATER CURB STOPS = 3/4"
- TUBING TO BE YARDLEY 3406 OR EQUAL.
- SADDLES 2" - 3" TO BE BRASS FULL CIRCLE TYPE.
- SADDLES 4" AND LARGER TO BE D.I. DUAL STRAP TYPE.
- CURB STOPS TO BE TIED TO MARKER STAKE.
- SADDLE MAY BE INSTALLED AT ANGLE (WITHIN 45° OF HORIZONTAL).
- MARKER STAKES PAINTED SAFETY BLUE FOR WATER, PURPLE FOR REUSE.

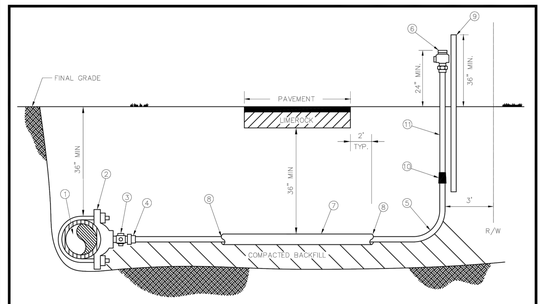
CREATED 02/24/03
REVISED _____

SINGLE NEAR SIDE WATER SERVICE - 3/4"
SINGLE NEAR SIDE REUSE SERVICE - 1"
POLYETHYLENE TUBING

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 17



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	*	PIPE, PVC (DR-18) OR D.I.P.
2	1	SADDLE, SERVICE W/ 1" F.I.P. THREAD
3	1	1" CORPORATION (M.I.P. x COMP.)
4	1	1" INSERT (STAINLESS STEEL)
5	*	1" TUBING, POLYETHYLENE
6	1	3/4" WATER OR 1" REUSE CURB STOP BALL VALVE W/ LOCK WINGS (F.I.P. x COMP.)
7	*	2" CASING, PVC OR HDPE - 2' BEYOND EDGE PAVEMENT
8	*	SEALER, RAM-NEK
9	1	2" x 4" P.T. MARKER STAKE
10	1	1" x 3/4" COUPLING (COMP. x COMP.) WATER ONLY
11	1	3/4" WATER OR 1" REUSE TUBING, POLYETHYLENE 4'

NOTES:
- ALL FITTINGS FOR POLYETHYLENE TUBING ARE BRASS COMPRESSION TYPE.
- A VALVE BOX MAY BE REQUIRED AS SPECIFIED BY THE ENGINEER.
- CURB STOP TO TERMINATE 24" ABOVE GROUND AT R/W LINE.
- REUSE CURB STOPS = 1" / WATER CURB STOPS = 3/4"
- TUBING TO BE YARDLEY 3406 OR EQUAL.
- SADDLES 2" - 3" TO BE BRASS FULL CIRCLE TYPE.
- SADDLES 4" AND LARGER TO BE D.I. DUAL STRAP TYPE.
- CURB STOPS TO BE TIED TO MARKER STAKE.
- SADDLE MAY BE INSTALLED AT ANGLE (WITHIN 45° OF HORIZONTAL).
- MARKER STAKES PAINTED SAFETY BLUE FOR WATER, PURPLE FOR REUSE.

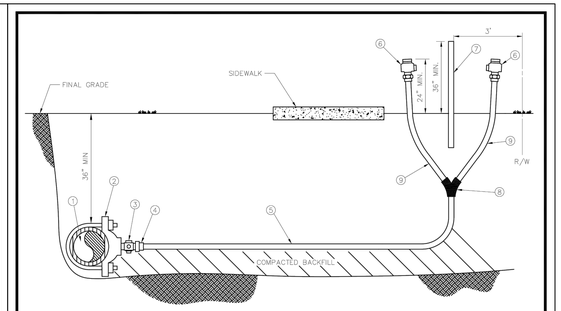
CREATED 02/24/03
REVISED _____

SINGLE FAR SIDE WATER SERVICE - 3/4"
SINGLE FAR SIDE REUSE SERVICE - 1"
POLYETHYLENE TUBING

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 18



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	*	PIPE, PVC (DR-18) OR D.I.P.
2	1	SADDLE, SERVICE W/ 1" F.I.P. THREAD
3	1	1" CORPORATION (M.I.P. x COMP.)
4	1	1" INSERT (STAINLESS STEEL)
5	*	1" TUBING, POLYETHYLENE
6	1	3/4" WATER OR 1" REUSE CURB STOP BALL VALVE W/ LOCK WINGS (F.I.P. x COMP.)
7	1	2" x 4" P.T. MARKER STAKE
8	1	1" x 3/4" WYE BRANCH (COMP. x COMP.) WATER ONLY
		1" x 1" WYE BRANCH (COMP. x COMP.) REUSE ONLY
9	1	3/4" WATER OR 1" REUSE TUBING, POLYETHYLENE 4'

NOTES:
- ALL FITTINGS FOR POLYETHYLENE TUBING ARE BRASS COMPRESSION TYPE.
- A VALVE BOX MAY BE REQUIRED AS SPECIFIED BY THE ENGINEER.
- CURB STOP TO TERMINATE 24" ABOVE GROUND AT R/W LINE.
- REUSE CURB STOPS = 1" / WATER CURB STOPS = 3/4"
- TUBING TO BE YARDLEY 3406 OR EQUAL.
- SADDLES 2" - 3" TO BE BRASS FULL CIRCLE TYPE.
- SADDLES 4" AND LARGER TO BE D.I. DUAL STRAP TYPE.
- CURB STOPS TO BE TIED TO MARKER STAKE.
- SADDLE MAY BE INSTALLED AT ANGLE (WITHIN 45° OF HORIZONTAL).
- MARKER STAKES PAINTED SAFETY BLUE FOR WATER, PURPLE FOR REUSE.

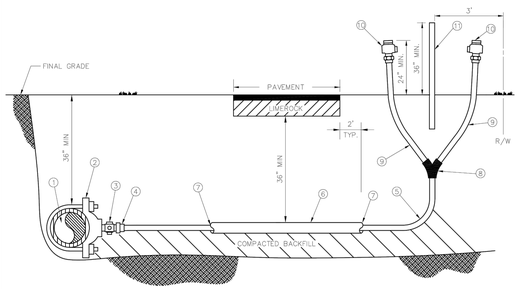
CREATED 02/24/03
REVISED _____

DOUBLE NEAR SIDE WATER SERVICE - 3/4"
DOUBLE NEAR SIDE REUSE SERVICE - 1"
POLYETHYLENE TUBING

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 19



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	*	PIPE, PVC (DR-18) OR D.I.P.
2	1	SADDLE, SERVICE W/ 1" F.I.P. THREAD
3	1	1" CORPORATION (M.I.P. x COMP.)
4	1	1" INSERT (STAINLESS STEEL)
5	*	1" TUBING, POLYETHYLENE
6	*	2" CASING, PVC OR HDPE - 2' BEYOND EDGE PAVEMENT
7	*	SEALER, RAM-NEK
8	1	WYE BRANCH FOR POLY TUBING
9	2	3/4" WATER OR 1" REUSE TUBING, POLYETHYLENE 4'
10	2	3/4" WATER OR 1" REUSE CURB STOP BALL VALVE W/ LOCK WINGS (F.I.P. x COMP.)
11	1	2" x 4" P.T. MARKER STAKE

NOTES:
- ALL FITTINGS FOR POLYETHYLENE TUBING ARE BRASS COMPRESSION TYPE.
- A VALVE BOX MAY BE REQUIRED AS SPECIFIED BY THE ENGINEER.
- CURB STOP TO TERMINATE 24" ABOVE GROUND AT R/W LINE.
- REUSE CURB STOPS = 1" / WATER CURB STOPS = 3/4"
- TUBING TO BE YARDLEY 3406 OR EQUAL.
- SADDLES 2" - 3" TO BE BRASS FULL CIRCLE TYPE.
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- MARKER STAKES PAINTED SAFETY BLUE FOR WATER, PURPLE FOR REUSE.

CREATED 02/24/03
REVISED _____

WATER AND REUSE LATERAL SERVICE 3/4"
(DOUBLE - FAR SIDE)
POLYETHYLENE TUBING

PASCO COUNTY UTILITIES

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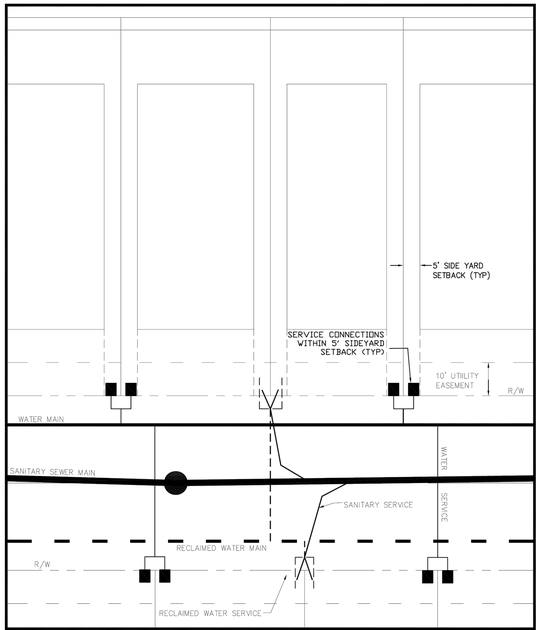
DETAIL 20



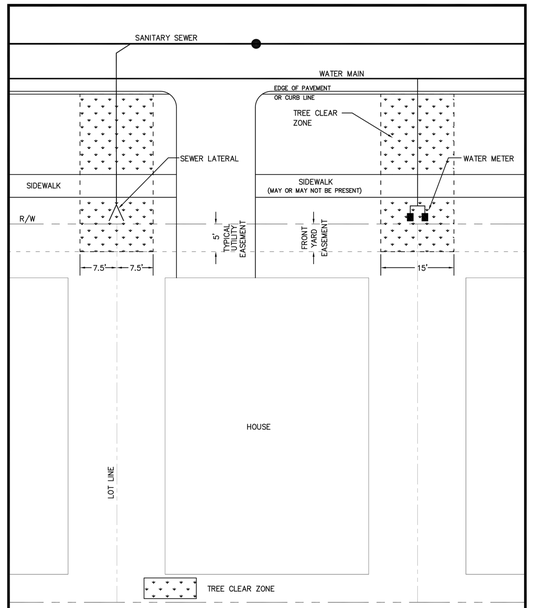
CREATED 02/24/03
REVISED _____

STANDARD 40' (DETACHED) SINGLE FAMILY
TYPICAL UTILITY CONNECTION DETAIL

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 22



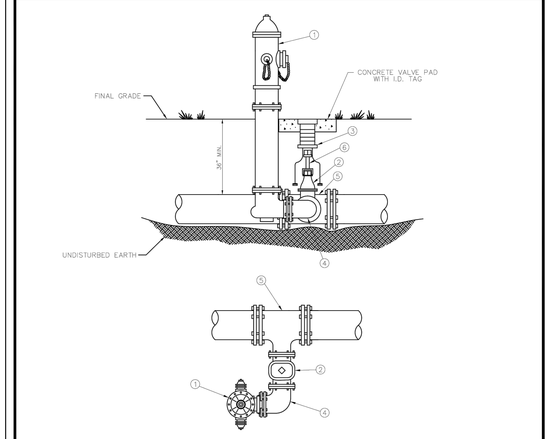
CREATED 03/14/06
REVISED _____

METER INSTALLATION/SEWER LATERAL
TREE CLEAR ZONE - RESIDENTIAL DEVELOPMENTS

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 24



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	1	HYDRANT, FIRE (5 1/4" VALVE MIN.), PAINTED YELLOW
2	1	6" VALVE, GATE, MJ RESILIENT WEDGE
3	1	BOX, VALVE SLIP TYPE
4	1	6" BEND, ANCHORING, D.I.
5	1	TEE, ANCHORING, MJ
6	*	VALVE EXTENSION ROD, AS NECESSARY (3' MAX. BELOW GRADE)

CREATED 02/24/03
REVISED _____

FIRE HYDRANT
PARALLEL TO THE MAIN

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 25

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: NTS
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000026 FL LB 0000616 FL LC-26000022

PREPARED FOR

CWES XXI, LLC

SEAL

DAVID B. FLEEMAN, P.E.
License Number 55362

SHEET TITLE

POTABLE WATER NOTES & DETAILS

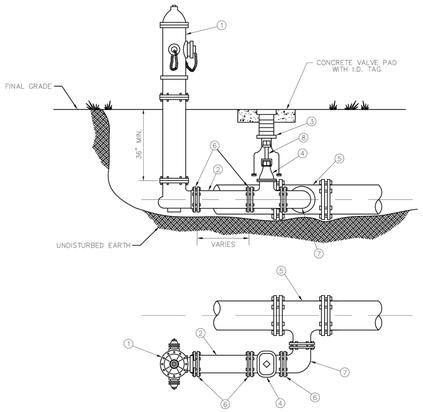
PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-39

Printed: August 24, 2015 (11:08am EST) by: pcarbello
F:\6216\005\CAD.ENG\6216-005_DET-UTL.DWG



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	1	HYDRANT, FIRE (5 1/4" VALVE MIN.), PAINTED YELLOW
2	*	6" PIPE, P.V.C. (DR-18)
3	1	BOX, VALVE SLIP TYPE
4	1	6" VALVE, GATE, M.J. RESILIENT WEDGE
5	1	TEE, ANCHORING, M.J.
6	*	6" RESTRAINER GLAND (MEGALUG)
7	1	BEND, ANCHORING, D.I.
8	*	VALVE EXTENSION ROD, AS NECESSARY (3' MAX. BELOW GRADE)

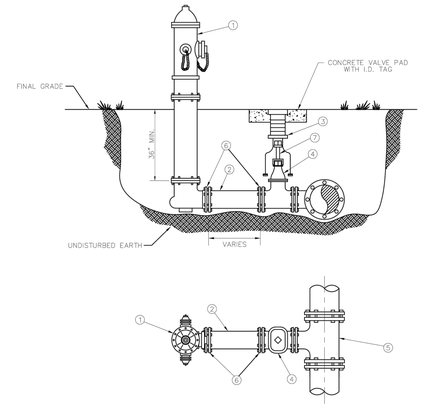
CREATED 02/24/03
REVISED

FIRE HYDRANT
PARALLEL TO THE MAIN

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 26



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	1	HYDRANT, FIRE (5 1/4" VALVE MIN.), PAINTED YELLOW
2	*	6" PIPE, P.V.C. (DR-18)
3	1	BOX, VALVE SLIP TYPE
4	1	6" VALVE, GATE, M.J. RESILIENT WEDGE
5	1	TEE, ANCHORING, M.J.
6	*	6" RESTRAINER GLAND (MEGALUG)
7	*	VALVE EXTENSION ROD, AS NECESSARY (3' MAX. BELOW GRADE)

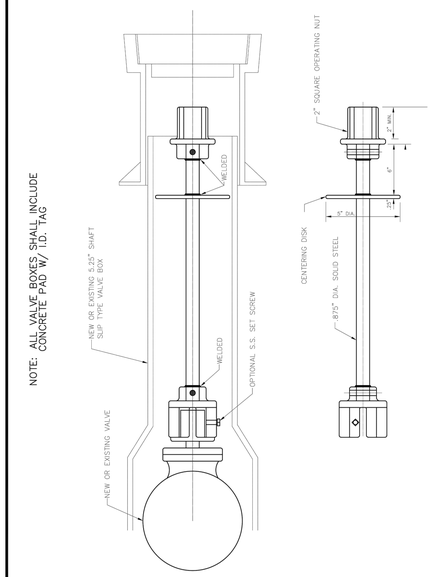
CREATED 02/24/03
REVISED

FIRE HYDRANT
PERPENDICULAR TO THE MAIN

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 27



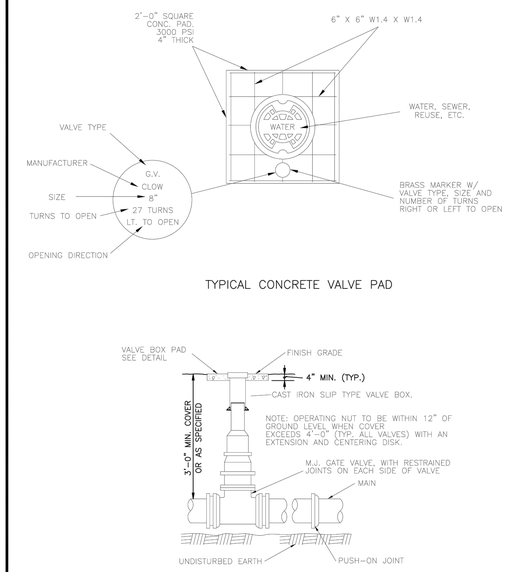
CREATED 02/24/03
REVISED

VALVE EXTENSION RODS

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 29



CREATED 02/24/03
REVISED

VALVE BOX DETAIL
SLIP TYPE

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 30

PIPE RESTRAINT LENGTHS IN FEET COMMON FITTINGS

WATER MAINS - TEST PRESSURE 150 PSI						
		FITTING TYPE				
		11-1/4°	22-1/2°	45°	90°	DEAD END
PIPE SIZE	4"	2'	4'	8'	20'	45'
	6"	3'	6'	12'	28'	63'
	8"	4'	7'	15'	36'	82'
	10"	4'	9'	18'	43'	98'
	12"	5'	10'	21'	50'	116'
	16"	6'	13'	26'	63'	148'
	20"	7'	15'	31'	76'	179'
	24"	9'	17'	36'	87'	208'

FORCE MAINS - TEST PRESSURE 100 PSI						
		FITTING TYPE				
		11-1/4°	22-1/2°	45°	90°	DEAD END
PIPE SIZE	4"	1'	3'	6'	13'	30'
	6"	2'	4'	8'	19'	42'
	8"	2'	5'	10'	24'	55'
	10"	3'	6'	12'	29'	66'
	12"	3'	7'	14'	34'	77'
	16"	4'	8'	18'	42'	99'
	20"	5'	10'	21'	50'	119'
	24"	6'	11'	24'	58'	139'

RESTRAINT LENGTHS ARE MEASURED FROM THE CENTER LINE OF THE FITTING ALONG THE PIPE IN BOTH DIRECTIONS (EXCEPT DEAD ENDS).

CREATED 02/24/03
REVISED

RESTRAINED JOINT TABLE
COMMON FITTINGS

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 31

PIPE RESTRAINT LENGTHS IN FEET TEES (BRANCH SIDE)

WATER MAINS - TEST PRESSURE 150 PSI										
		BRANCH SIZE								
		3"	4"	6"	8"	10"	12"	16"	20"	24"
RUN SIZE	3"	6'	14'	30'	—	—	—	—	—	—
	4"	2'	11'	28'	44'	—	—	—	—	—
	6"	1'	2'	22'	40'	52'	—	—	—	—
	8"	1'	1'	16'	35'	48'	62'	—	—	—
	10"	1'	1'	10'	30'	44'	58'	83'	—	—
	12"	1'	1'	3'	25'	40'	55'	80'	103'	—
	16"	1'	1'	1'	14'	31'	48'	75'	98'	119'
	20"	1'	1'	1'	2'	22'	40'	69'	94'	116'
	24"	1'	1'	1'	1'	11'	31'	63'	89'	111'

RESTRAINT LENGTHS ARE MEASURED FROM THE CENTER LINE OF THE TEE ALONG THE BRANCH FOR THE DISTANCE INDICATED. A MINIMUM OF 5 FEET OF RESTRAINED PIPE MUST BE INSTALLED ON BOTH RUNS OF THE TEE. MEGALUG TYPE RESTRAINERS ARE REQUIRED ON ALL JOINTS.

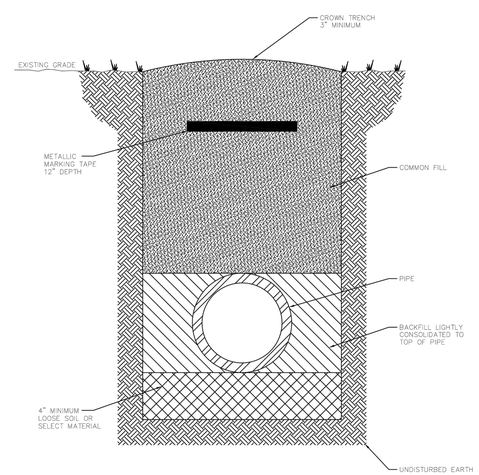
CREATED 02/24/03
REVISED

RESTRAINED JOINT TABLE
TEES (BRANCH SIDE)

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 32



NOTES: -LOOSE SOIL OR SELECT MATERIAL IS NATIVE SOIL EXCAVATED FROM THE TRENCH FREE OF ROCKS AND FOREIGN MATERIAL.
-COMMON FILL TO BE PLACED AND COMPACTED IN 12" LAYERS. ROLLING EQUIPMENT SHALL NOT BE USED FOR COMPACTION UNTIL A MINIMUM OF 18" OF COMMON FILL HAS BEEN PLACED AND COMPACTED OVER THE PIPE. THREE FEET OF FILL SHALL BE PLACED BEFORE A HYDROHAMMER MAY BE USED FOR COMPACTION.

NTS

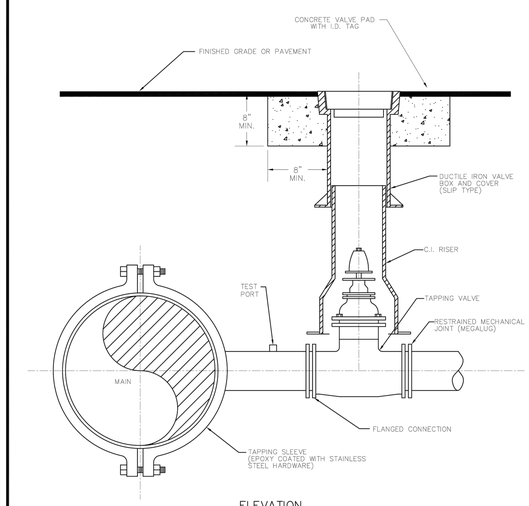
CREATED 02/24/03
REVISED

PIPE LAYING CONDITIONS
STANDARD UNPAVED AREAS

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 35



ELEVATION

NOTES:
- SADDLE CONNECTION WILL BE TESTED TO 150 PSI PRIOR TO TAPPING MAIN.
- MECHANICAL JOINTS/UNDERGROUND PIPING SHALL BE RESTRAINED AS SPECIFIED BY COUNTY/ENGINEER.
- VALVE EXTENSION ROD SHALL BE UTILIZED, AS NECESSARY, SO THAT VALVE OPERATING NUT IS A MAXIMUM OF 3' BELOW GRADE.

CREATED 02/24/03
REVISED

WATER, REUSE, AND FORCE MAIN
TAPPING DETAIL W/ VALVE LOCATION

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 37

NO.	DATE	DESCRIPTION	REVISIONS

DESIGNED BY: DBF
CHECKED BY: DBF
DRAWN BY: DBF/PGC
SCALE: NTS
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
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3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000040 FL LB 0000616 FL LC-26000022

PREPARED FOR:
CWES XXI, LLC

SEAL
DAVID B. FLEEMAN, P.E.
License Number 53362

SHEET TITLE
POTABLE WATER NOTES & DETAILS

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-40

Printed: August 24, 2015 (11:09am EST) by: pcarbollo
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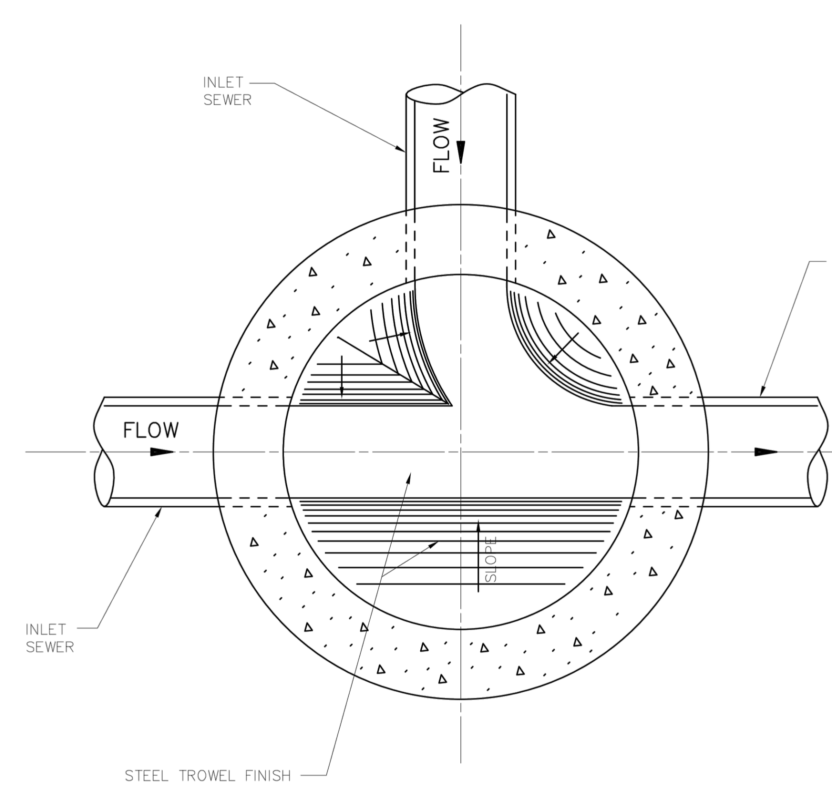
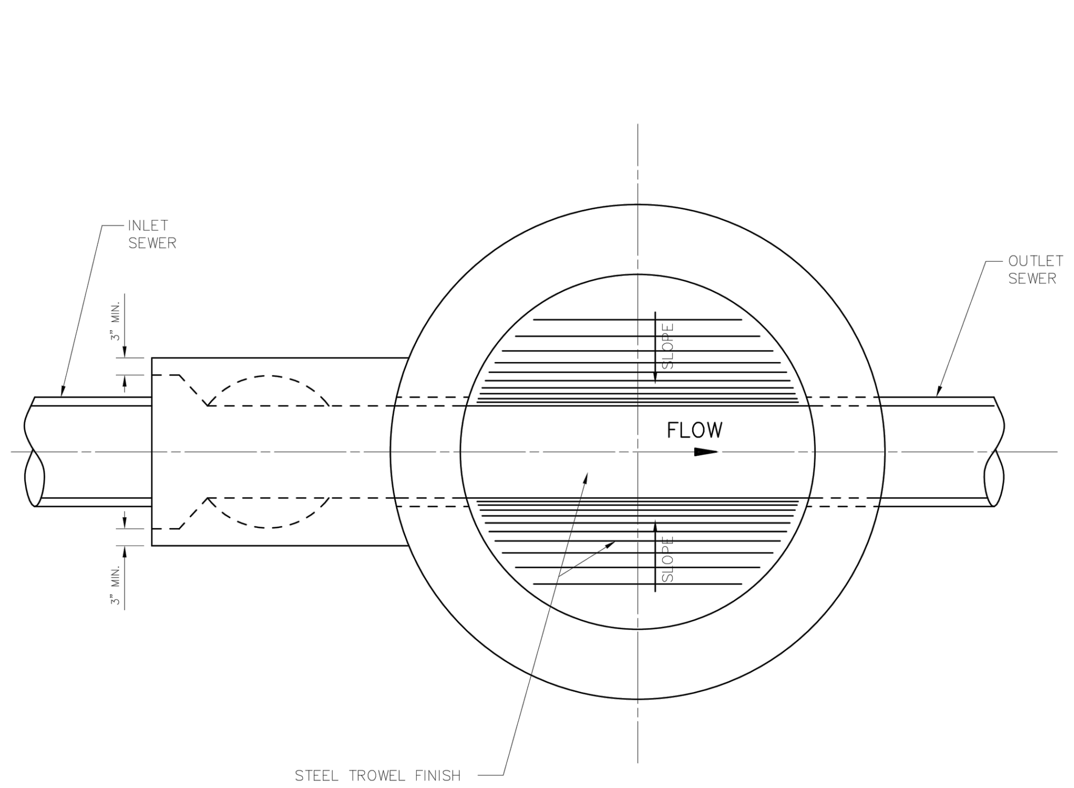


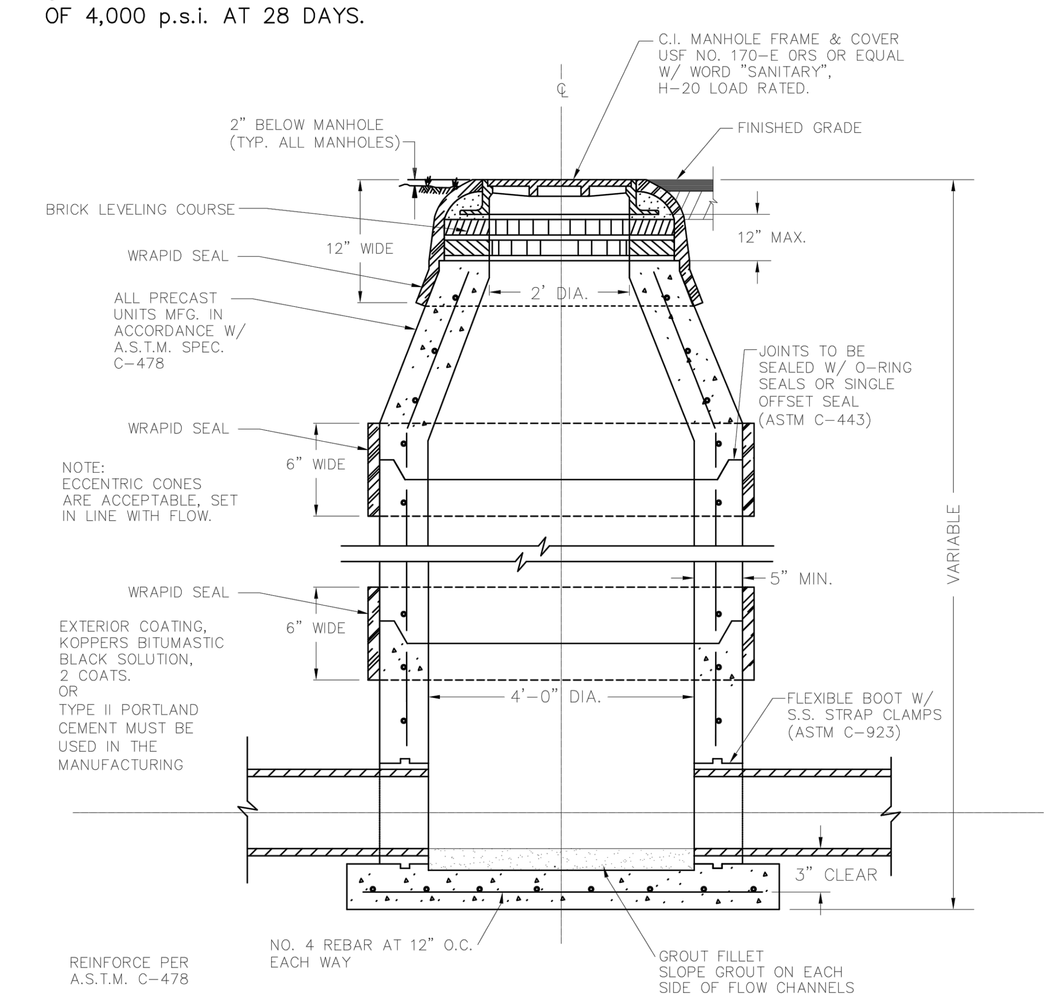
CREATED 02/24/03 REVISED	STANDARD MANHOLE (BENCH AND INVERTS)	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL	
	PASCO COUNTY UTILITIES	DETAIL 39	



NOTE:
DROP MANHOLE TO BE USED WHEN THE DIFFERENCE BETWEEN INVERTS IS 2' OR MORE.

CREATED 02/24/03 REVISED	DROP MANHOLE (BENCH AND INVERTS)	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL	
	PASCO COUNTY UTILITIES	DETAIL 40	

NOTE:
PRECAST CONCRETE
SHALL ATTAIN A MINIMUM
COMPRESSIVE STRENGTH
OF 4,000 p.s.i. AT 28 DAYS.



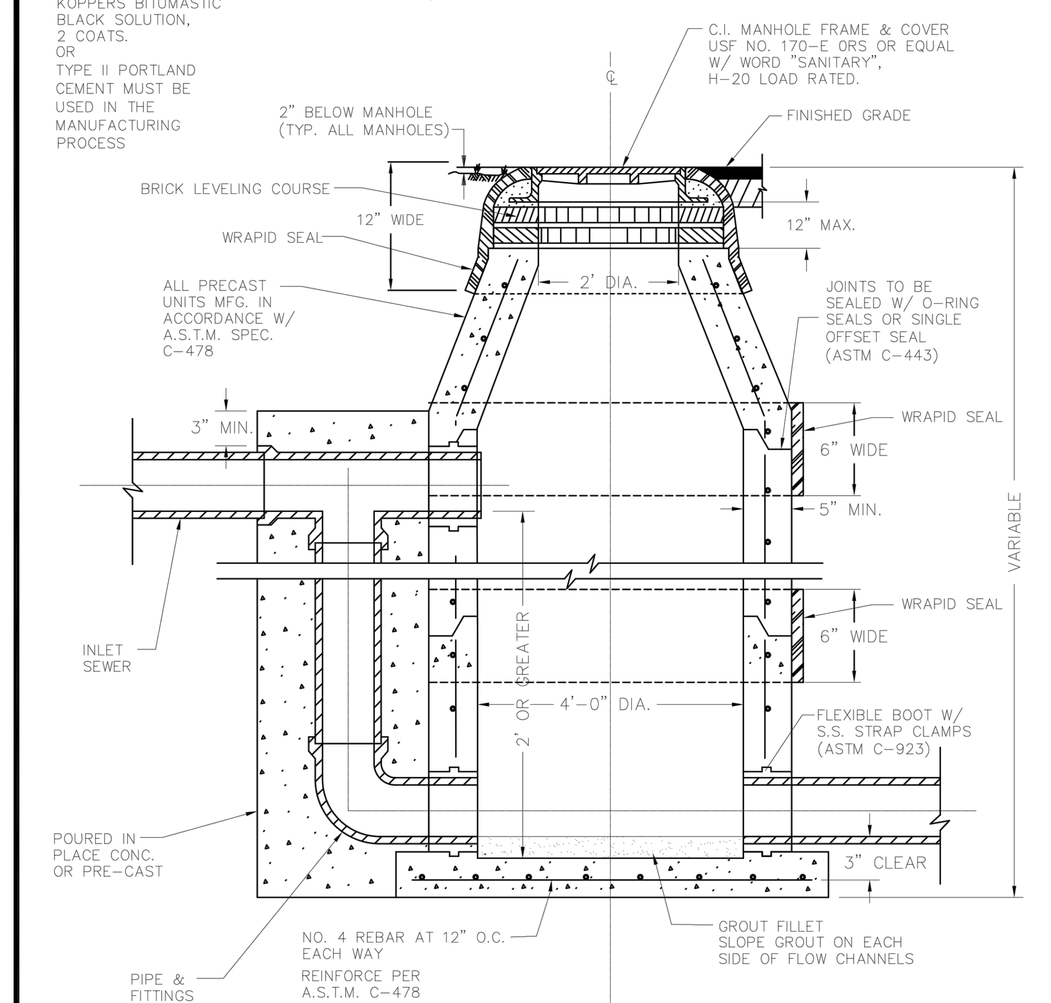
NOTE:
1. WRAPID SEAL MUST BE USED ON ALL JOINTS, CASTINGS AND RISER RINGS: ON ALL JOINTS ON AIR RELEASES, MANHOLES, GREASE/WATER, OIL/WATER SEPARATORS, AND WETWELLS.
2. WRAPID SEAL MUST BE USED IN ACCORDANCE WITH MANUFACTURES RECOMMENDATIONS.
3. PASCO COUNTY SHALL HAVE THE OPTION OF SPECIFYING THE TYPE OF INTERIOR LINING TO BE INSTALLED FOR EACH INDIVIDUAL MANHOLE.
4. PASCO COUNTY SHALL HAVE THE OPTION OF REQUIRING A NEGATIVE PRESSURE TEST PER ASTM C-1244
5. LIFT HOLES MUST NOT PENETRATE THE WALLS

CREATED 02/24/03 REVISED	STANDARD MANHOLE	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL	
	PASCO COUNTY UTILITIES	DETAIL 41	

NOTE:
ECCENTRIC CONES ARE ACCEPTABLE, SET IN LINE WITH FLOW.

EXTERIOR COATING, KOPPERS BITUMASTIC BLACK SOLUTION, 2 COATS. OR TYPE II PORTLAND CEMENT MUST BE USED IN THE MANUFACTURING PROCESS

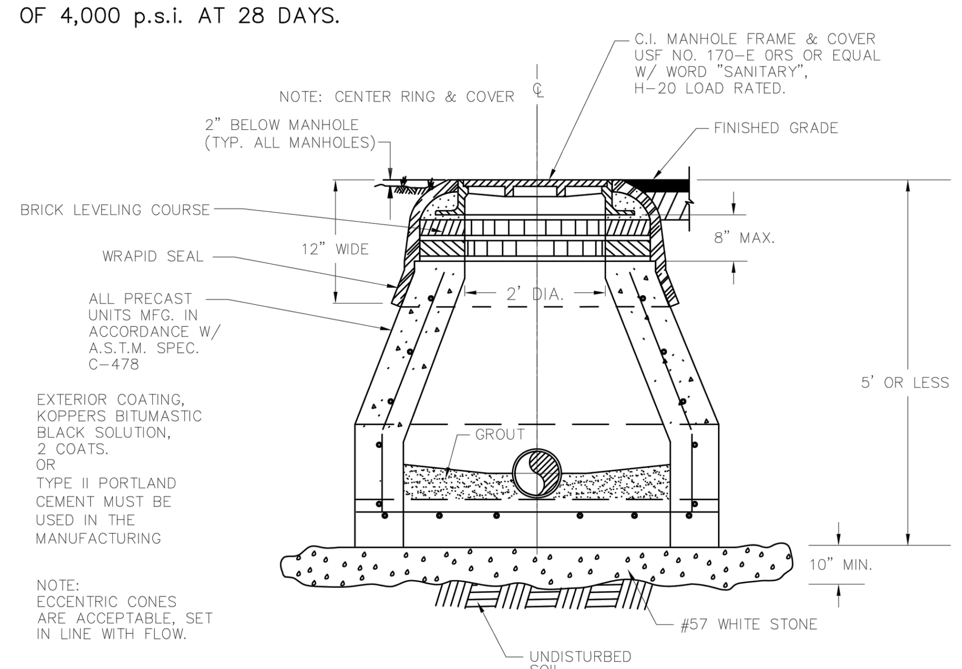
NOTE:
PRECAST CONCRETE
SHALL ATTAIN A MINIMUM
COMPRESSIVE STRENGTH
OF 4,000 p.s.i. AT 28 DAYS.



NOTE:
1. WRAPID SEAL MUST BE USED ON ALL JOINTS, CASTINGS AND RISER RINGS: ON ALL JOINTS ON AIR RELEASES, MANHOLES, GREASE/WATER, OIL/WATER SEPARATORS, AND WETWELLS.
2. WRAPID SEAL MUST BE USED IN ACCORDANCE WITH MANUFACTURES RECOMMENDATIONS.
3. PASCO COUNTY SHALL HAVE THE OPTION OF SPECIFYING THE TYPE OF INTERIOR LINING TO BE INSTALLED FOR EACH INDIVIDUAL MANHOLE.
4. PASCO COUNTY SHALL HAVE THE OPTION OF REQUIRING A NEGATIVE PRESSURE TEST PER ASTM C-1244
5. LIFT HOLES MUST NOT PENETRATE THE WALLS

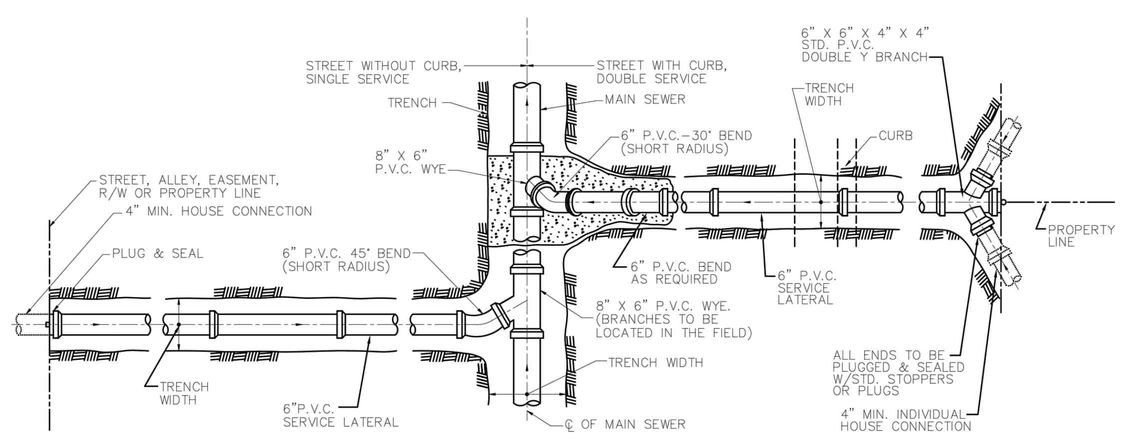
CREATED 02/24/03 REVISED	DROP MANHOLE	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL	
	PASCO COUNTY UTILITIES	DETAIL 42	

NOTE:
PRECAST CONCRETE
SHALL ATTAIN A MINIMUM
COMPRESSIVE STRENGTH
OF 4,000 p.s.i. AT 28 DAYS.

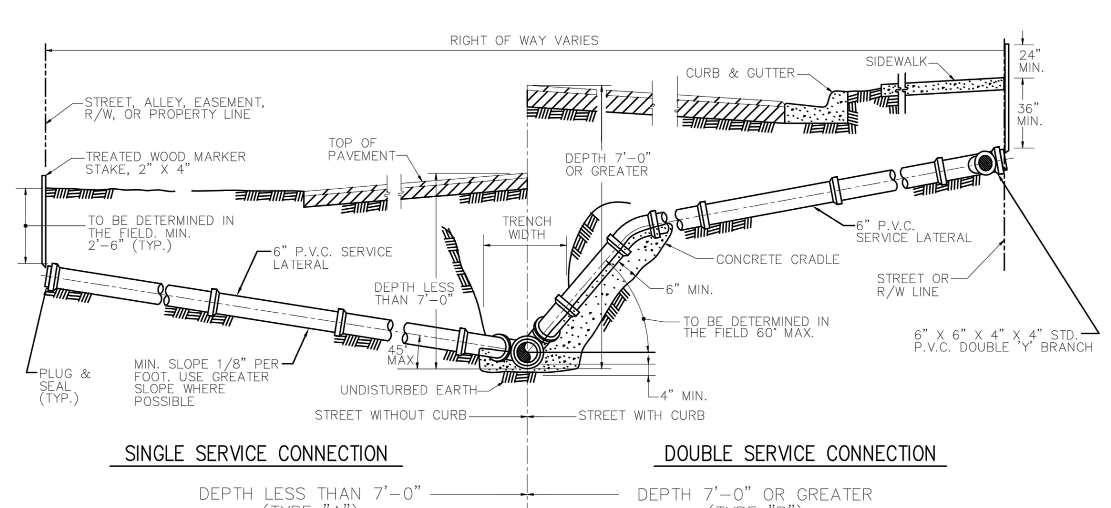


NOTE:
- A BEDDING OF CLASS I, CLASS II, OR CLASS III MATERIAL SHALL BE REQUIRED WHEN THE MANHOLE BOTTOM CANNOT BE INSTALLED ON UNDISTURBED SOIL OR IF THE NATIVE SOIL IS CLASS IV OR CLASS V MATERIAL.
- THIS TYPE OF CONSTRUCTION SHALL BE LIMITED TO DEPTHS OF (0-5) FEET.
- EXTERIOR COATING SHALL BE KOPPERS BITUMASTIC BLACK SOLUTION, 2 COATS.
- WRAPID SEAL MUST BE USED ON ALL JOINTS, CASTINGS AND RISER RINGS. WRAPID SEAL MUST BE USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- PASCO COUNTY SHALL HAVE THE OPTION OF SPECIFYING THE TYPE OF INTERIOR LINING TO BE INSTALLED FOR EACH INDIVIDUAL MANHOLE.
- PASCO COUNTY SHALL HAVE THE OPTION OF REQUIRING A NEGATIVE PRESSURE TEST PER ASTM C-1244
- LIFT HOLES MUST NOT PENETRATE THE WALLS

CREATED 02/24/03 REVISED	MANHOLE SHALLOW CONSTRUCTION (CLOSED BOTTOM)	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL	
	PASCO COUNTY UTILITIES	DETAIL 43	



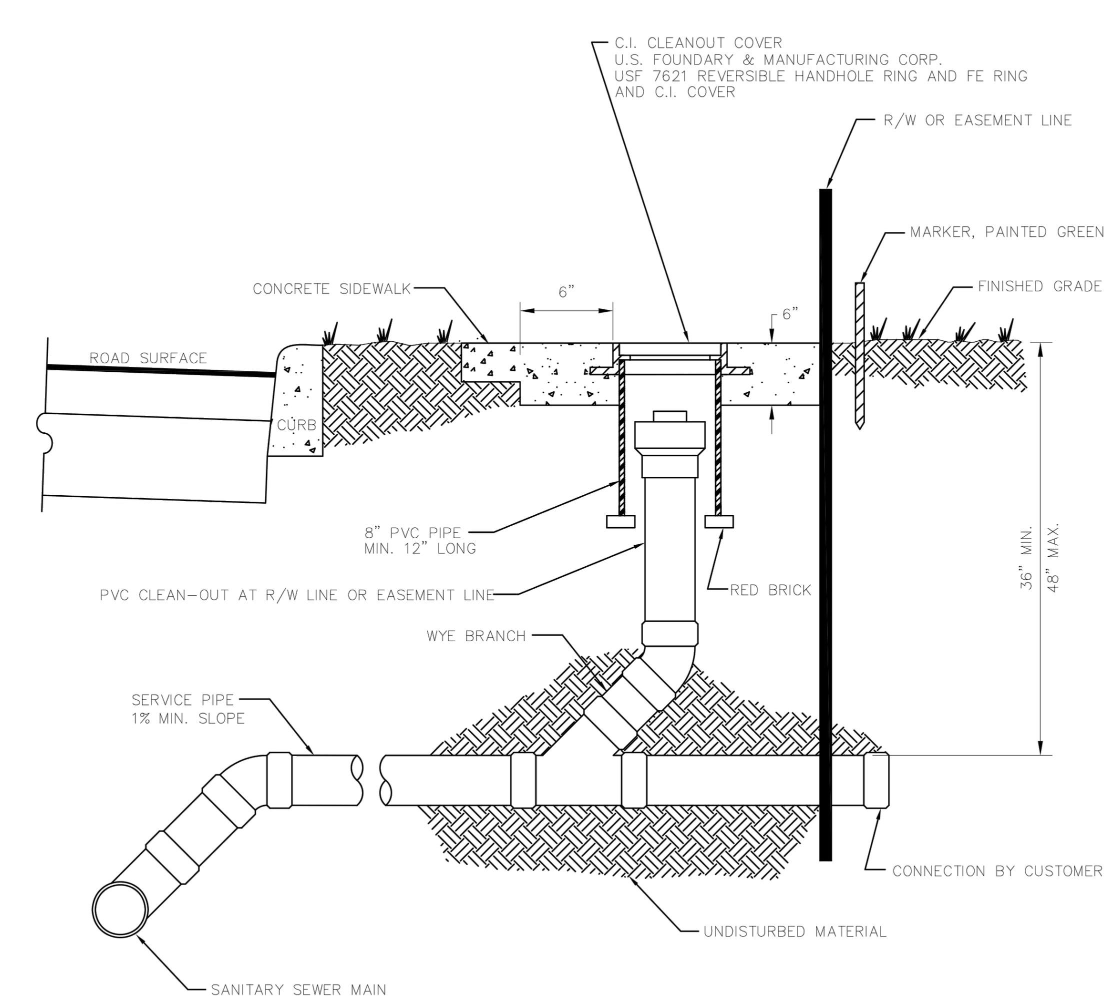
PLAN



SECTION

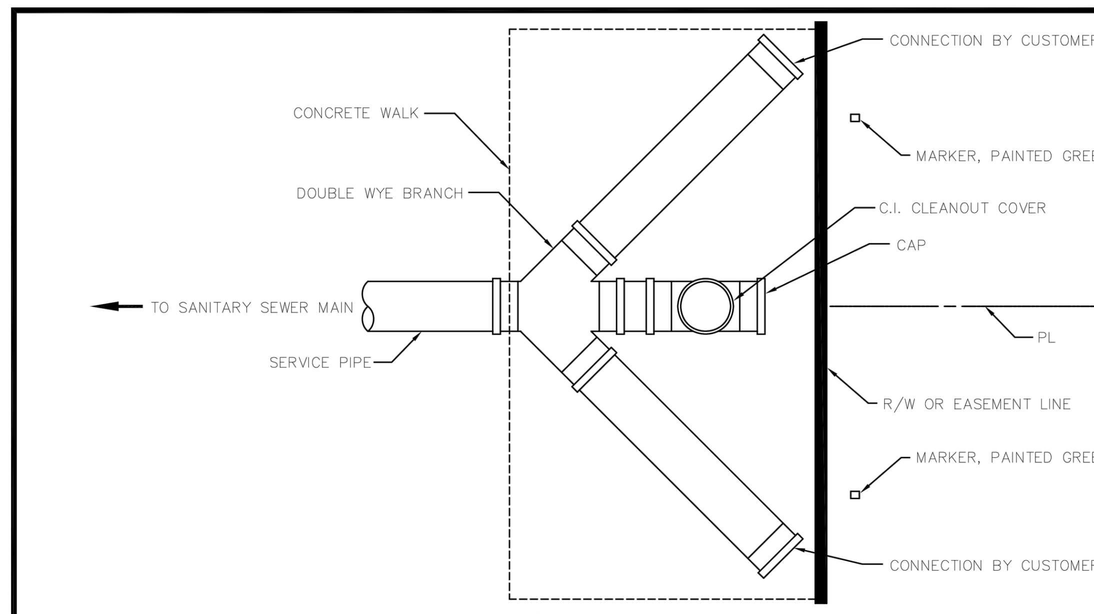
NOTE:
- CONTRACTOR SHALL MAKE, ON A CLEAN SET OF PLANS, THE FINAL STATIONING OR DISTANCE AND DIRECTION FROM MANHOLE OF EACH SERVICE LATERAL AND THEN GIVE TO ENGINEER FOR RECORD PURPOSES.
- PROVIDE 2" x 4" PRESSURE TREATED WOOD MARKER STAKE AT ALL SANITARY SERVICES (INCLUDE IN PIPE PRICE), TOP OF STAKE TO BE PAINTED WITH GREEN PAINT.
- THE MINIMUM DIAMETER OF ALL SERVICE LATERALS SHALL BE 6 INCHES.

CREATED 02/24/03 REVISED	SEWER LATERAL CONNECTION	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL	
	PASCO COUNTY UTILITIES	DETAIL 44	

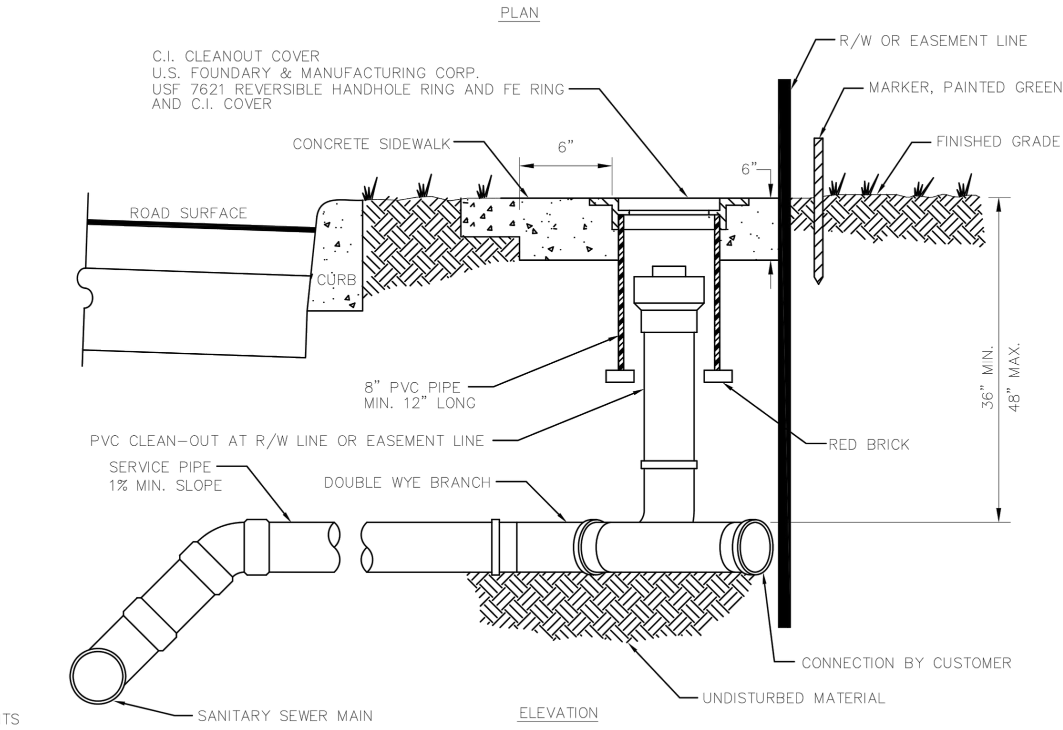


NTS

CREATED 02/24/03 REVISED	SANITARY SEWER – SINGLE WYE CONNECTION AND TYPICAL CLEAN-OUT	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL	
	PASCO COUNTY UTILITIES	DETAIL 45	



PLAN



NTS

ELEVATION

CREATED 02/24/03 REVISED	SANITARY SEWER – DOUBLE WYE CONNECTION AND TYPICAL CLEAN-OUT	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL	
	PASCO COUNTY UTILITIES	DETAIL 46	

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: DBF	CHECKED BY: DBF	PROJECT NUMBER 6216-005	
DRAWN BY: DBF/PGC	SCALE: NTS	PLAN DATE AUG 2015	

GENESIS
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PREPARED FOR
CWES XXI, LLC

SEAL
DAVID B. FLEEMAN, P.E.
License Number 55362

SHEET TITLE
WASTEWATER
NOTES & DETAILS

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-41

Printed: August 24, 2015 (11:09am EST) by: pcarballo
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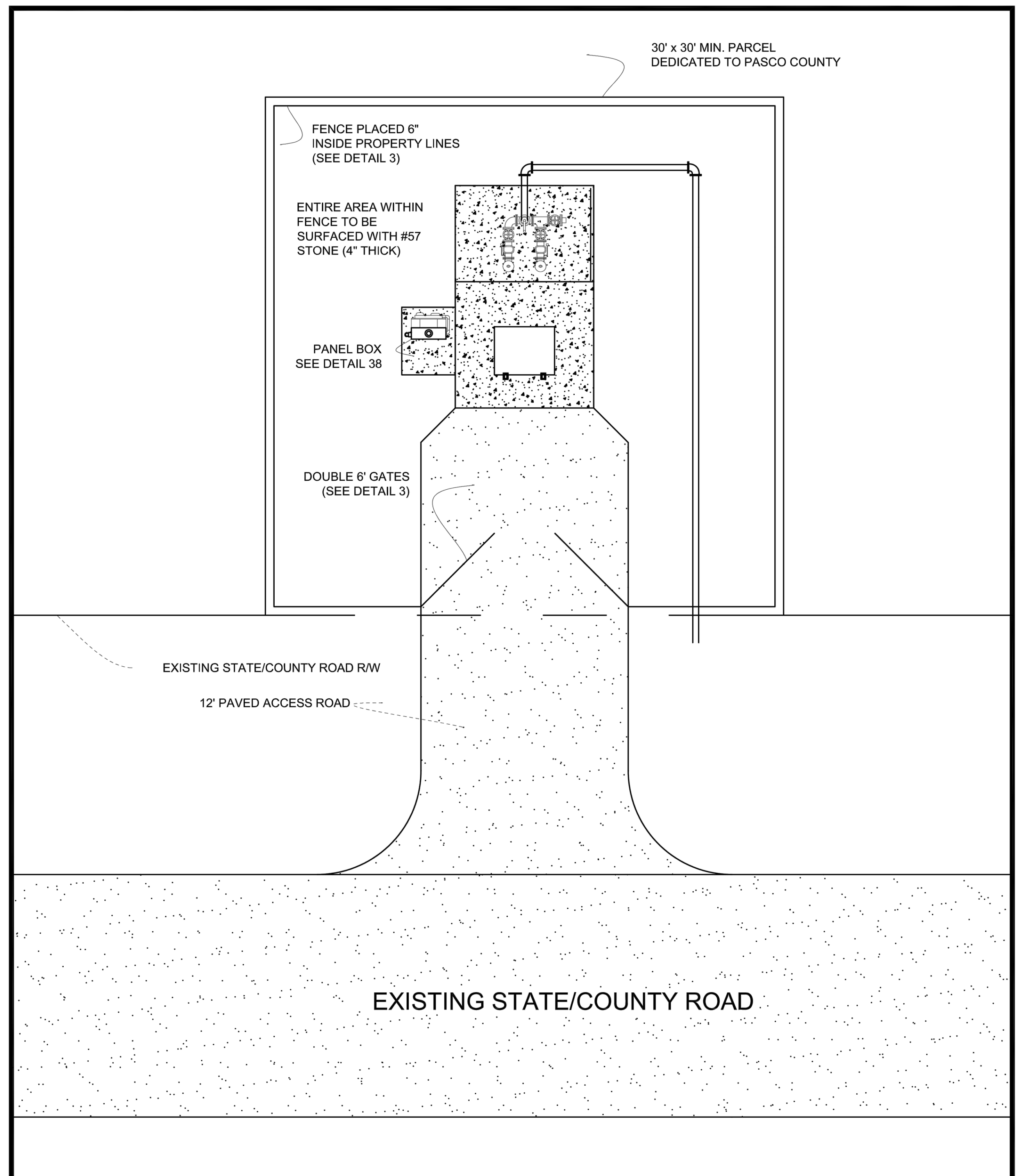


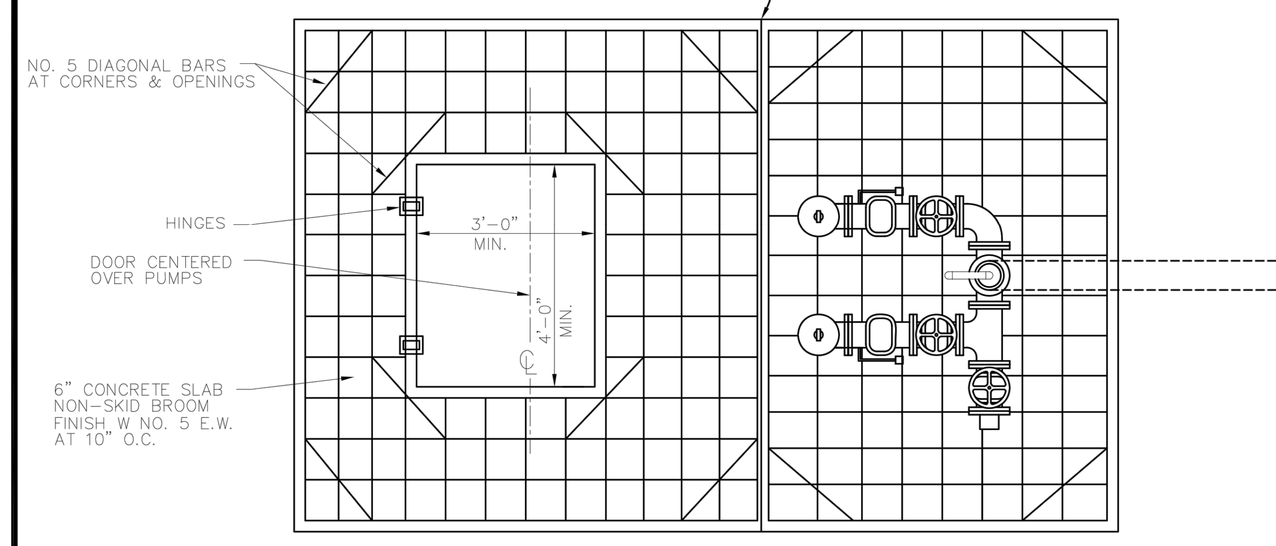
CREATED 02/24/03
REVISED

PUMP STATION (DUPLEX)
SITE PLAN & ACCESS

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

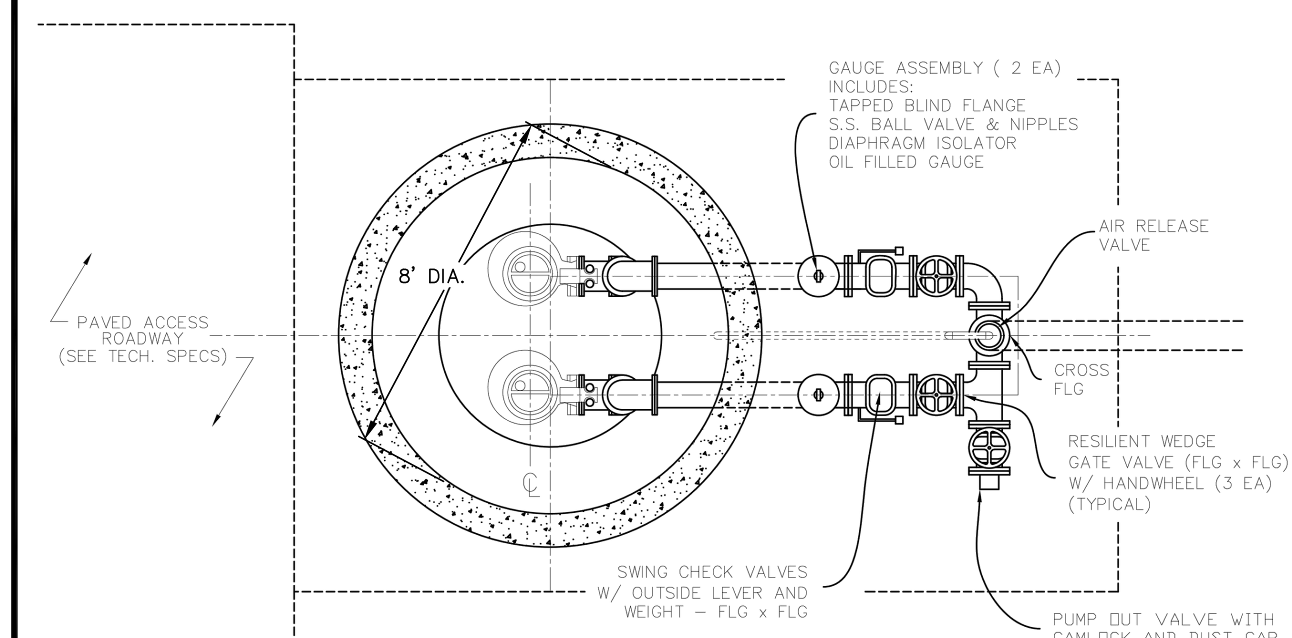
PASCO COUNTY UTILITIES

DETAIL 47



SLAB PLAN VIEW
LIFT STATION & PIPING

NOTE: PUMP OUT ASSEMBLY CAN BE PLACED ON EITHER SIDE TO BEST ACCOMMODATE PROPOSED LAYOUT



PLAN VIEW
LIFT STATION & PIPING

CREATED 02/24/03
REVISED

PUMP STATION
SLAB & PIPING
PLAN

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

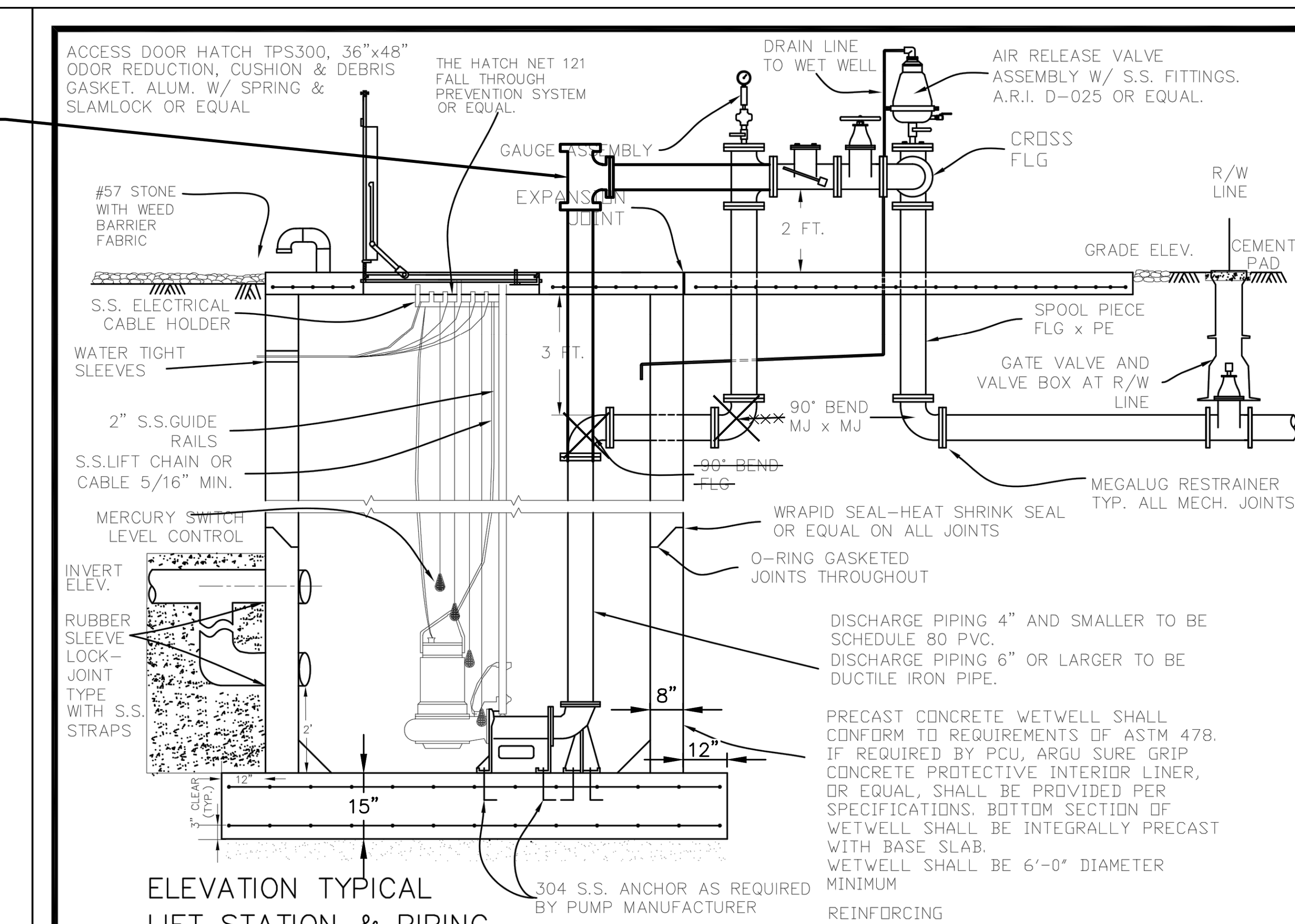
PASCO COUNTY UTILITIES

DETAIL 48

DISCHARGE PIPING TO EXIT TOP OF WET WELL: 4" TEE & GAUGE ASSEMBLY TO BE RELOCATED AND INSTALLED AS SHOWN, EXTEND SPOOL PIPE TO CHECK VALVE

PROPOSED CONTROL ELEVATIONS

TOP SLAB =	94.60'
INVERT ELEV. =	68.90'
HIGH WATER ALARM =	68.75'
LAG PUMP ON =	68.50'
LEAD PUMP ON =	68.25'
ALL PUMPS OFF =	67.00'
BOTTOM =	64.20'



ELEVATION TYPICAL
LIFT STATION & PIPING

NOTES:

1. ALL PIPING WITHIN THE WETWELL (LARGER THAN 4") AND ALL ABOVE GROUND PIPING SHALL BE MANUFACTURED FLANGED PIPE. FIELD FABRICATED FLANGES (UNI-FLANGE OR MEGAFLANGE) WILL NOT BE PERMITTED.

2. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE PROVIDED WITH CERAMIC EPOXY INTERIOR LINING (PROTECTO 401). IN ADDITION, ALL PIPE & FITTINGS WITHIN THE WETWELL SHALL BE PROVIDED WITH POLYETHYLENE SHRINK WRAPPED EXTERIOR COATING.

3. ALL UNDERGROUND FITTINGS SHALL BE RESTRAINED MECHANICAL JOINT AND SHALL BE PROVIDED WITH PROTECTO 401 INTERIOR LINING.

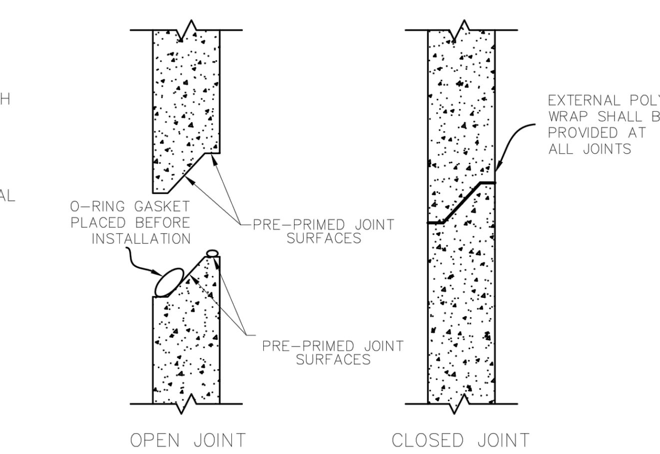
4. IF LIFT CABLES ARE USED, LIFTING RINGS MUST BE PROVIDED EVERY 4 FT.

5. INDIVIDUAL WALL PENETRATION SLEEVES SHALL BE PROVIDED FOR EACH PUMP CABLE.

6. ALL HARDWARE (INCLUDING FLANGE BOLTS & NUTS) SHALL BE STAINLESS STEEL.

7. ALL ABOVE GROUND PIPING TO BE PAINTED SAFETY GREEN.

8. SLAB ELEVATION TO BE 12 IN. ABOVE C/L OF ROADWAY OR 12 IN. ABOVE 100 YEAR FLOOD PLAIN – WHICHEVER IS HIGHER.



PRECAST JOINT DETAIL

CREATED 02/24/03
REVISED

DUPLEX PUMP STATION
ELEVATION & PIPING
PROFILE

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

PASCO COUNTY UTILITIES

DETAIL 49

SANITARY LIFT STATION CALCULATIONS

Project Name: **Grantham Ranch East**
Date: **August 14, 2015**
Prepared By: **DBF/PGC**
Checked by : **DBF**

I. DESIGN CAPACITY ASSUMPTIONS

A. Average Daily Flow (ADF)

		Multiplier		
# of Units:	225	200	45,000	269 units x 200 GPD = 53,800
Office Building Square Footage	0	0.15	0	
Flow Per Outparcel A (GPD):	0	250	0	
ADF - Calculated Gal. Per Day (GPD) =			45,000	GPD
			0.045	MGD

B. Peak Hour Flow

Peak Factor [PF]:	3	(Double check using Appendix 5 to the right)					
Buisness Hours	18						
Peak Hour Flow = (ADF x PF)							
Peak Hour Flow =	125.00	GPM	0.2785	CFS	135,000	GPD	
Min Flow =	6.25	GPM	0.0139	CFS	9,000	GPD	
Min. Velocity in Force Main (FPS):	2.0						

II. WETWELL DESIGN

A. Design Criteria:
* Max pump motor cycle rate = 6 starts per hour
* Max detention time at min flow = 30 minutes — 187.50 GAL

B. Pump Control Level Settings
* Pump cycling rates are at a max when inflow equals 1/2 the design pumping rate of [GPM]: 180.00 GPM
Wetwell Volume Required (V) Between Lead Pump Start and Pump Shut-off Level:
V = (Cycle Period X 1/2 Pump Rate)/2 = 450 GAL
Wetwell Diameter (D) [FT] = 8 FT
Wetwell Volume (GAL/FT) = 376 GAL/FT
Wetwell Level Change Between Pump Stop and Lead Pump Start [FT]= 1.20 Provided 1.25 OK
Design For Minimum [IN] = 14 GAL Prov. 469.74

Control Elevations Table	
Description	**Elevation**
Bottom	64.20
All Pumps Off	67.00
Lead Pump On	68.25
Lag Pump On	68.50
High Water Alarm	68.75
Influent Invert	68.90
Top of Slab	94.60

Notes:
Lift Station
30.40 Feet Deep
11424.17 Total Wet Well Storage (gal)

Pump Height 0 INCHES

III. SYSTEM CURVE CALCULATIONS

A. Friction Loss

Pump Station Piping				
Item	**Quantity**	**Size (IN)**	**Equivalent Length (FT)**	**Total (FT)**
90 degree bend	4	4	10	40
45 degree bend	0	4	5	0
Swing check	1	4	25	25
Gate valve	2	4	2.5	5
Tee	1	4	22.5	22.5
Enlargement	1	4 to 6	3.67	3.67
			TOTAL	**96.17**

Length of pipe throughout pump station [ft] = 44.4
Total Equivalent Length [ft] = 140.57

PUMP STATION PIPE SIZE 4 INCHES

Force Main Piping				
Item	**Quantity**	**Size (IN)**	**Equivalent Length (FT)**	**Total (FT)**
PVC to Ex. FM	3000	6	1	3000
Tee	1	6	35	35
Gate valve	0	6	3.5	0
45 degree bend	2	6	7.5	15
90 degree bend	4	6	16	64
Plug valve	2	6	3.5	7
			TOTAL	**3121**

FORCE MAIN PIPE SIZE 6 INCHES

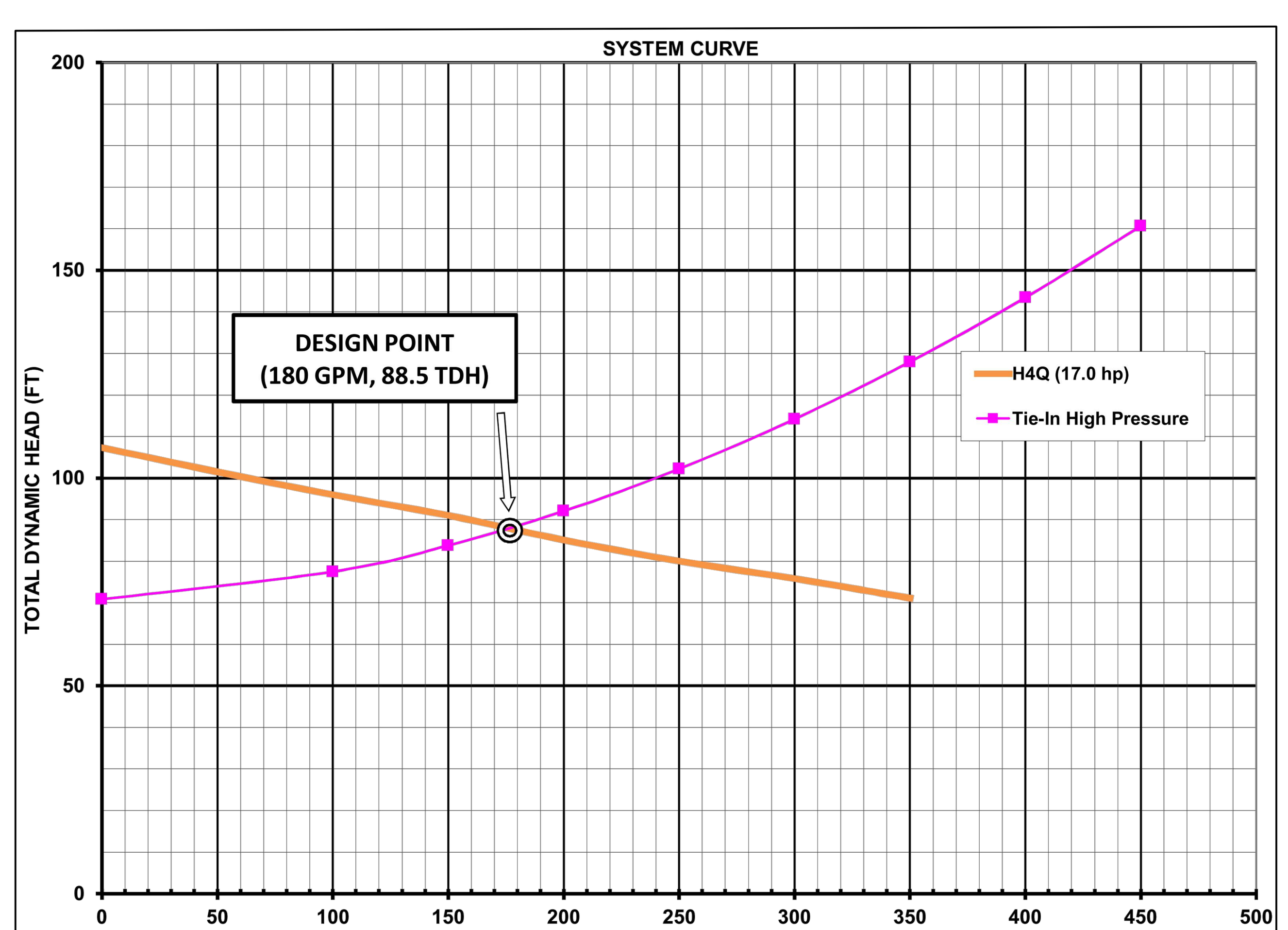
B. Static Head
Pipe C/L at Highest Discharge Point = 105.50 [B1]
Low Water Level (All Pumps Off) = 67.00 [B2]
Total Static Head (B1-B2) = 38.50

System Curve		Hazen-Williams Coef [C] = 120									Operating	Operating
Description		**Flow Rate (GPM)**									Point	Point
	EQ. LENGTH	**0**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**180.0**	**180.0**
6"ForceMain	3121	0.000	3.806	8.057	13.719	20.730	29.046	38.631	49.457	61.497	11.289	11.289
4"PS Piping	140.57	0.000	1.225	2.593	4.416	6.672	9.349	12.434	15.918	19.793	3.634	3.634
12" ForceMain	7600.00	0.000	1.643	2.323	3.109	3.999	4.990	6.082	7.272	8.559	2.782	2.782
Static Lift	38.50	38.50	38.50	38.50	38.50	38.50	38.50	38.50	38.50	38.50	38.50	38.50
Pressure @ Tie-In (FT)		12" FM within Old Pasco Rd. (to be constructed by School Board)										
Tie-In Low Pressure		32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3
Tie-In High Pressure		32.3	32.30	32.30	32.30	32.30	32.30	32.30	32.30	32.3	32.30	32.30
Total Dynamic Head (FT)												
Tie-In Low Pressure		70.80	77.47	83.77	92.04	102.20	114.19	127.95	143.45	160.65	88.50	88.50
Tie-In High Pressure		70.80	77.47	83.77	92.04	102.20	114.19	127.95	143.45	160.65	88.50	88.50

hf = [10.44L x (flow^1.85)]/[(c^1.85) x (d^4.87)]

DESIGN RESULTS

Tie-In High Pressure		Tie-In Low Pressure						Pipe
180.0	GPM	180.0	GPM	**Velocity Check (GPM / Area of FM) =**	2.04	FT/S	Size [IN]	6
88.5	TDH	88.5	TDH	**Min Pump Run Time (V_{on-off}/ GPM) =**	2.61	MIN	Area [SF]	0.1963



IV. FLOTATION CALCULATIONS - CONCRETE WETWELL

A. Assumptions

* Concrete (Reinforced) [lbs/ft^3]=	150	* (A) Wetwell Inside Diam. [FT] =	8.00
* Saturated Soil [lbs/ft^3] =	120	* (B) Wetwell Outside Diam. [FT] =	9.33
* Water [lbs/ft^3] =	62.4	* (C) Wetwell Base Slab Diam. [FT] =	11.33
* Dimensions in Feet		* (D) Wetwell Slab Thickness [FT] =	1.25
* No Water in Wetwell		* (E) Wetwell Barrel Height [FT] =	30.40
* Neglect Top Slab Weight			
* Neglect Soil Friction		* Wall Thickness [Inches] =	8.00
* Round Wetwell Barrel		* Base slab overlap [IN] =	12
* Circular Wetwell Base			
* The Water Table is at Grade	3.8		

B. Barrel Weight = [B^2 - A^2] x (PI/4)(E)(150) = 82770.4 lbs
C. Bottom Slab Weight = (C^2) x (PI/4)(D)(150) = 18915.0 lbs
D. Soil Weight = [(C^2) - (B^2)] x (PI/4)(E)(120 - 62.4) = 56844.2 lbs
E. TOTAL WEIGHT = 158529.6 lbs

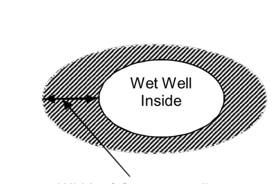
F. Weight of Water Displaced = [(B^2) x 3.14/4(E) + (C^2) x 3.14/4(D)] x 62.4 = 137652.7 lbs
1.15 Safety Factor — NO additional collar required

G. Cubic Yards Concrete Required (F / 4050) 2205.97

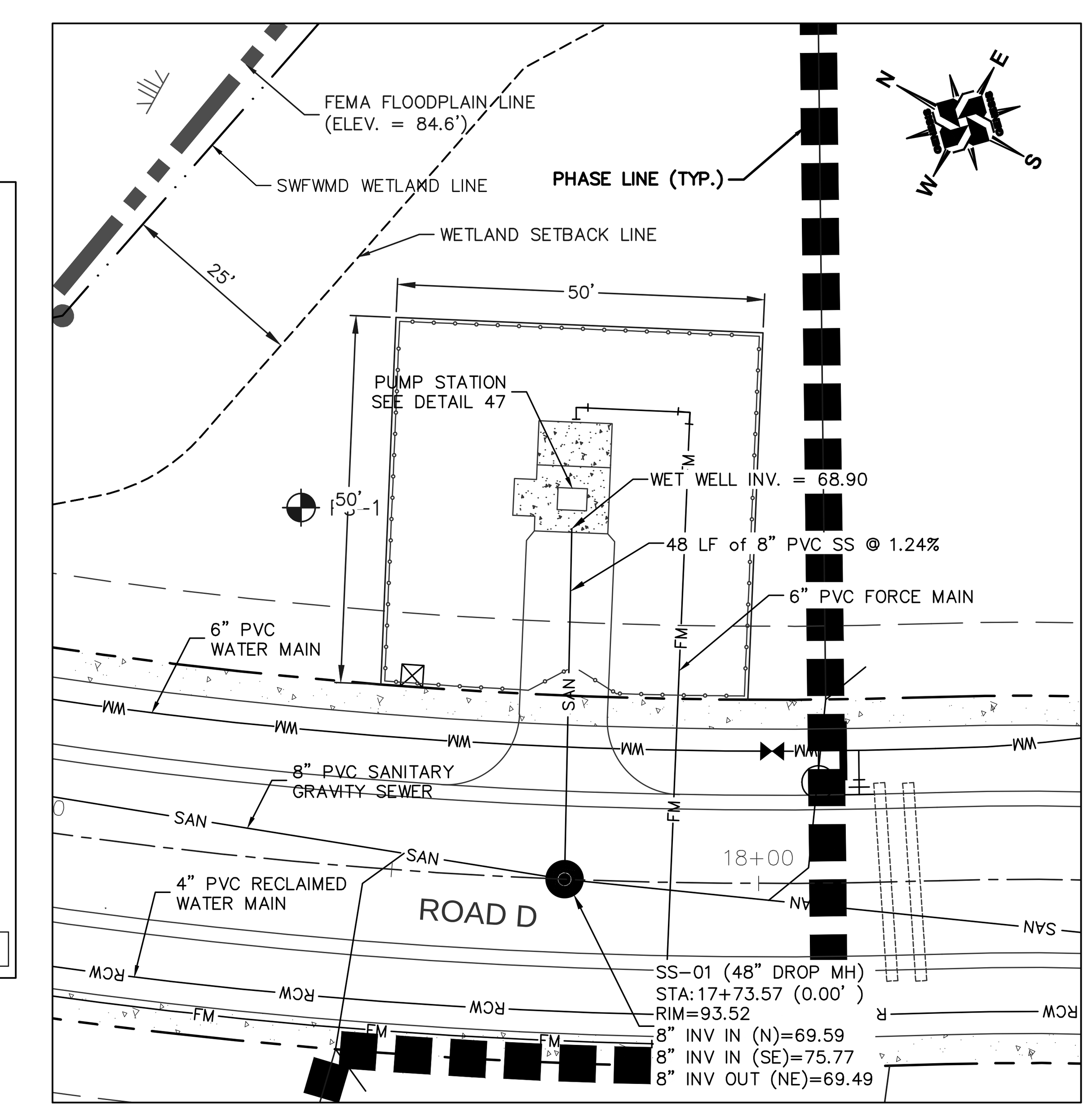
H. CHECK IF COLLAR IS NEEDED (IS F > E ?) NO

Concrete reuired for Collar (CY) 0.00 **or;**
Width of Concrete Collar (FT) 0.00
Depth of Concrete Collar (FT) 0.00

Concrete Collar Area SF= 0.00
Concrete Volume CF = 0.00 CY = 0.00
LBS Concrete Proposed = 0
Does it Float? NO
F.S. 1.152



Pump	Impeller		Point #1	Point #2	Point #3	Point #4	Point #5	Point #6	Point #7	Point #8	Point #9	Point #10
Hydromatic		GPM	0	50	100	150	200	250	300	350		
H4Q (17.0 hp)	9.375	Head	107.3	101.5	96	91	85.1	80	75.8	71.1		



PUMP STATION PLAN
1"=20'

20 0 20
(IN FEET)
1 Inch = 20 Feet

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 00009660 FL LB 0006816 FL LC 26000202

PREPARED FOR
CWES XXI, LLC

REVISIONS

NO.	DATE	DESCRIPTION

DESIGNED BY: **DBF**
CHECKED BY: **DBF**
DRAWN BY: **DBF/PGC**
SCALE: **AS SHOWN**
PROJECT NUMBER **6216-005**
PLAN DATE **AUG 2015**

SEAL
DAVID B. FLEEMAN, P.E.
License Number 55362

SHEET TITLE
PUMP STATION NOTES & DETAILS

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
C-42

Printed: August 24, 2015 (11:09am EST) by: pcarballo
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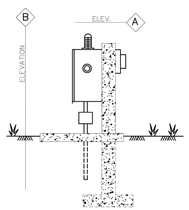


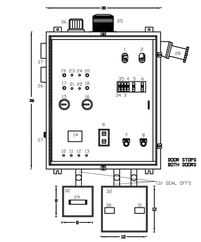
PANEL BOX ELEV.

NOTE:
POSITION PANEL BOX SO OPERATOR'S BACK IS NOT TO WET WELL WHILE FACING BOX

PANEL BOX TO BE LOCATED TO ALLOW UNOBSTRUCTED ACCESS TO WET WELL BY PAVED ACCESS ROAD

PANEL ELEVATION SHALL BE ABOVE 100-YEAR FLOOD ELEV. AND MUST BE SHOWN ON ALL PLANS

DUPLEXOR SHALL BE AN T.I.L 6012
ANY ALTERNATE TYPE MUST BE SPECIFICALLY APPROVED BY PASCO COUNTY



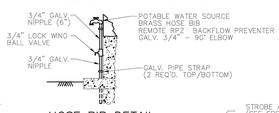
1 - MAIN BREAKER
2 - EMERGENCY BREAKER
3 - RECEPTACLE BREAKER
4 - CONTROL BREAKER
5 - MB1 MOTOR BREAKER 1
6 - MB2 MOTOR BREAKER 2
7 - OVERLOAD 1 RESET
8 - OVERLOAD 2 RESET
9 - DUPLEX RECEPTACLE (GFI)
10 - FTS1 FLOAT TEST SWITCH 1
11 - FTS2 FLOAT TEST SWITCH 2
12 - FTS3 FLOAT TEST SWITCH 3
13 - FTS4 FLOAT TEST SWITCH 4
14 - DUPLEXOR (SEE NOTE BELOW)
15 - ELAPSE TIME METER 1
16 - ELAPSE TIME METER 2
17 - PL1 OVERTEMP 1
18 - PL2 OVERTEMP 2
19 - PL3 MOISTURE 1
20 - PL4 MOISTURE 2
21 - OVERTEMP 1 TEST BUTTON
22 - OVERTEMP 2 TEST BUTTON
23 - MOISTURE 1 TEST BUTTON
24 - MOISTURE 2 TEST BUTTON
25 - AL ALARM LIGHT (DC)
26 - AH ALARM HORN (DC)
27 - ASB ALARM SILENCE BUTTON
28 - GR GENERATOR RECEPTACLE
29 - FLOAT TERMINAL STRIP
30 - PUMP 1 POWER TERMINAL BLOCK
31 - PUMP 2 POWER TERMINAL BLOCK
32 - (2) JUNCTION BOXES
33 - LA LIGHTNING ARRESTOR
34 - SPARE CIRCUIT BREAKER
35 - ACB DC ALARM CIRCUIT BREAKER
36 - AL ALARM LIGHT (AC)
37 - ALARM HORN (AC)

NOTE:
BREAKER, MODULAR CONTROL UNIT, & RESETS MOUNTED FOR OPERATION THROUGH INNER SAFETY DOOR

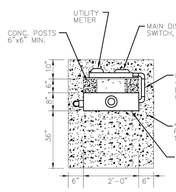
HOUR METERS (LF), RECEPTACLE TO BE MOUNTED ON INNER SAFETY DOOR

SEE TECHNICAL SPECIFICATION FOR DETAILS

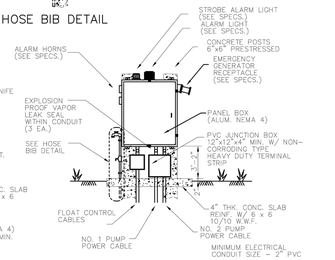
PANEL BOX COMPONENT LAY-OUT



HOSE BIB DETAIL

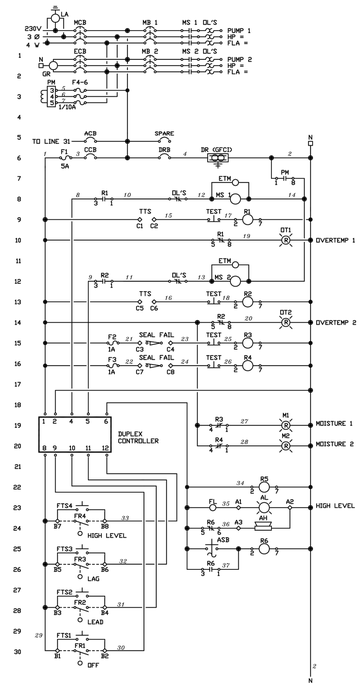


ELEVATION A

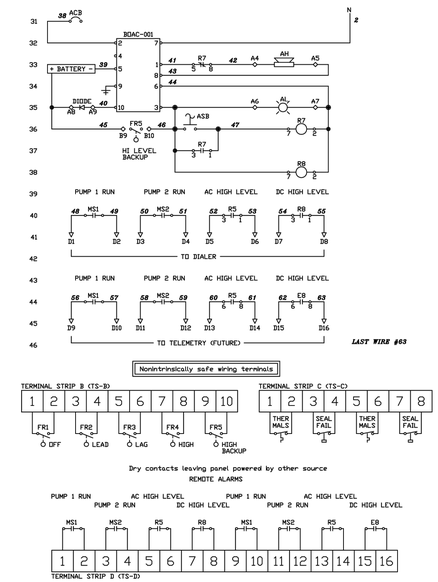


ELEVATION B

CREATED 02/24/03 REVISED	STANDARD PUMP STATION (DUPLEX) PANEL BOX ELEVATION & COMPONENT LAY-OUT	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
	PASCO COUNTY UTILITIES	DETAIL 50



CREATED 02/24/03 REVISED	STANDARD PUMP STATION WIRING DIAGRAM (1 OF 2)	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
	PASCO COUNTY UTILITIES	DETAIL 51



CREATED 02/24/03 REVISED	STANDARD PUMP STATION WIRING DIAGRAM (2 OF 2)	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
	PASCO COUNTY UTILITIES	DETAIL 52

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: MJS	CHECKED BY: DBF	PROJECT NUMBER 6216-005	
DRAWN BY: DBF/PGC	SCALE: 1" = 40'	PLAN DATE AUG 2015	

GENESIS
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PREPARED FOR:

CWES XXI, LLC

SHEET TITLE

PUMP STATION
NOTES & DETAILS

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

C-43

Printed: August 24, 2015 (11:09am EST) by: pcarbello
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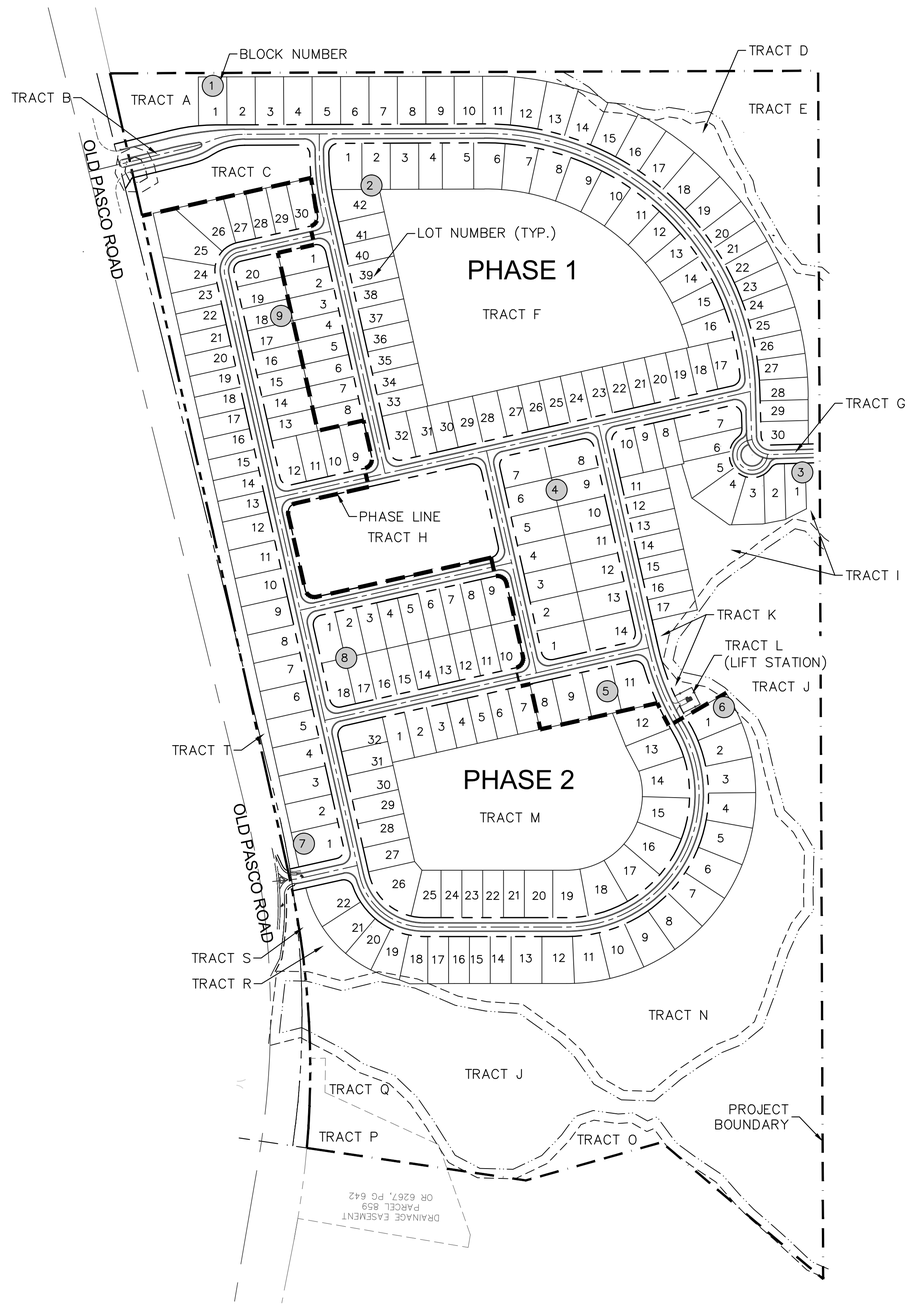

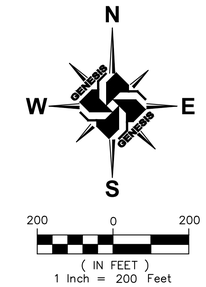

PROJECT ACREAGE: 104.670

OWNER/DEVELOPER:
DOUGLAS WEILAND
JES PROPERTIES, INC.
334 EAST LAKE ROAD, #172
PALM HARBOR, FLORIDA 34685
(727) 787-6330
DWEILAND@JESPROPERTIES.COM

PROJECT ENGINEER:
DAVID FLEEMAN, P.E.
GENESIS
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TAMPA, FLORIDA 33619
(813) 620-4500 EXT.5136
DFLEEMAN@GENESISGROUP.COM

PROJECT SURVEYOR:
DENNIS BENHAM, PSM
CROSSTOWN SURVEYORS
12441 ADVENTURE DRIVE
RIVERVIEW, FLORIDA 33579
(813) 741-1555
DJBENHAM@TAMPABAY.RR.COM

01	08/24/15	REVISED LAYOUT	
		REVISIONS	
DESIGNED BY:	DBF	CHECKED BY:	-
DRAWN BY:	DBF	SCALE:	1"=200'

PROJECT NUMBER 6216-005
PLAN DATE 04/01/2015

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CA-0000809 LB-0000601 FL LC-26000072

PREPARED FOR
CWES XXI, LLC
334 East Lake Road, #172
Palm Harbor, FL 34685-2427
(727) 787-6330

SEAL

SHEET TITLE
SITE MAP

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
EXHIBIT 01

Printed: August 24, 2015 (11:15am EST) by: casnyder
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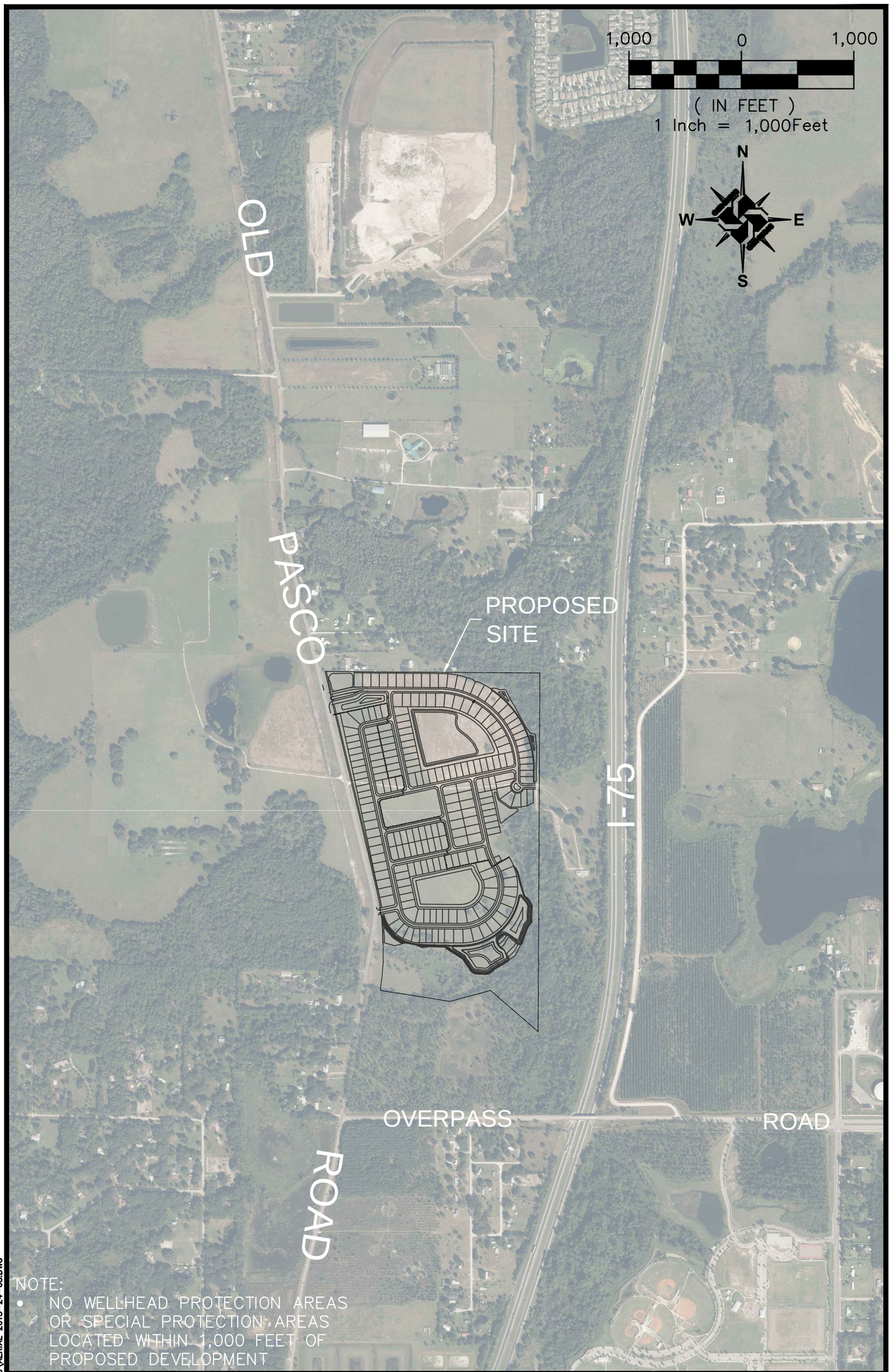

NOTE:
- NO WELLHEAD PROTECTION AREAS OR SPECIAL PROTECTION AREAS LOCATED WITHIN 1,000 FEET OF PROPOSED DEVELOPMENT

PREPARED BY:

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 00009660 FL LB 0006816 FL LC 26000202

PREPARED FOR:
GRANTHAM RANCH EAST

SHEET NAME:
LOCATION MAP

DESIGNED BY:	PROJECT # 6216-005
DRAWN BY: DBF	03/27/2015
CHECKED BY: DBF	SHEET 1 OF 1
REVISION DATE:	

Printed: August 24, 2015 (10:47am EST) by: asanyigo
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SPECIFIC PURPOSE SURVEY
(JURISDICTIONAL WETLANDS)

SECTION 29, TOWNSHIP 25 SOUTH, RANGE 20 EAST
PASCO COUNTY, FLORIDA

LEGAL DESCRIPTION

PARCEL ONE:

THE NORTH 40 ACRES OF THAT PART OF THE SOUTH 1/2 OF THE NORTHWEST 1/4 OF SECTION 29, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA LYING EAST OF THE EXISTING RIGHT-OF-WAY LINE OF PASCO ROAD AS NOW LOCATED; LESS ADDITIONAL RIGHT OF WAY AS SET FORTH IN DEEDS RECORDED IN OFFICIAL RECORDS BOOK 5895, PAGE 1214 AND OFFICIAL RECORDS BOOK 5895, PAGE 1218, OF THE PUBLIC RECORDS OF PASCO COUNTY, FLORIDA.

AND

PARCEL TWO:

THAT PART OF THE SOUTH 1/2 OF THE NORTHWEST 1/4 AND THAT PART OF THE SOUTHWEST 1/4 LYING EAST OF THE EXISTING RIGHT-OF-WAY OF PASCO ROAD; LESS AND EXCEPT THE FOLLOWING: COMMENCE AT THE SOUTHEAST CORNER OF THE SOUTHWEST 1/4; THENCE WEST ALONG THE SOUTH LINE THEREOF, 1,744.01 FEET; THENCE NORTH 09°50" EAST, 1,175.00 FEET; THENCE SOUTH 81°30' EAST, 764.72 FEET; THENCE NORTH 74°24' EAST, 372.50 FEET; THENCE SOUTH 49°41' EAST, 558.51 FEET TO THE EAST LINE OF THE SOUTHWEST 1/4 OF SECTION 29; THENCE SOUTH 00°10'30" EAST ALONG SAID EAST LINE 783.52 FEET TO THE POINT OF BEGINNING; AND EXCEPT THE NORTH 40 ACRES OF THAT PART OF THE SOUTH 1/2 OF THE NORTHWEST 1/4 LYING EAST OF THE EXISTING RIGHT-OF-WAY LINE OF PASCO ROAD AS NOW LOCATED; AND EXCEPT OLD PASCO ROAD RIGHT-OF-WAY PARCEL 159.1 AND OLD PASCO ROAD RIGHT-OF-WAY PARCEL 159.2, ALL BEING IN SECTION 29, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA.

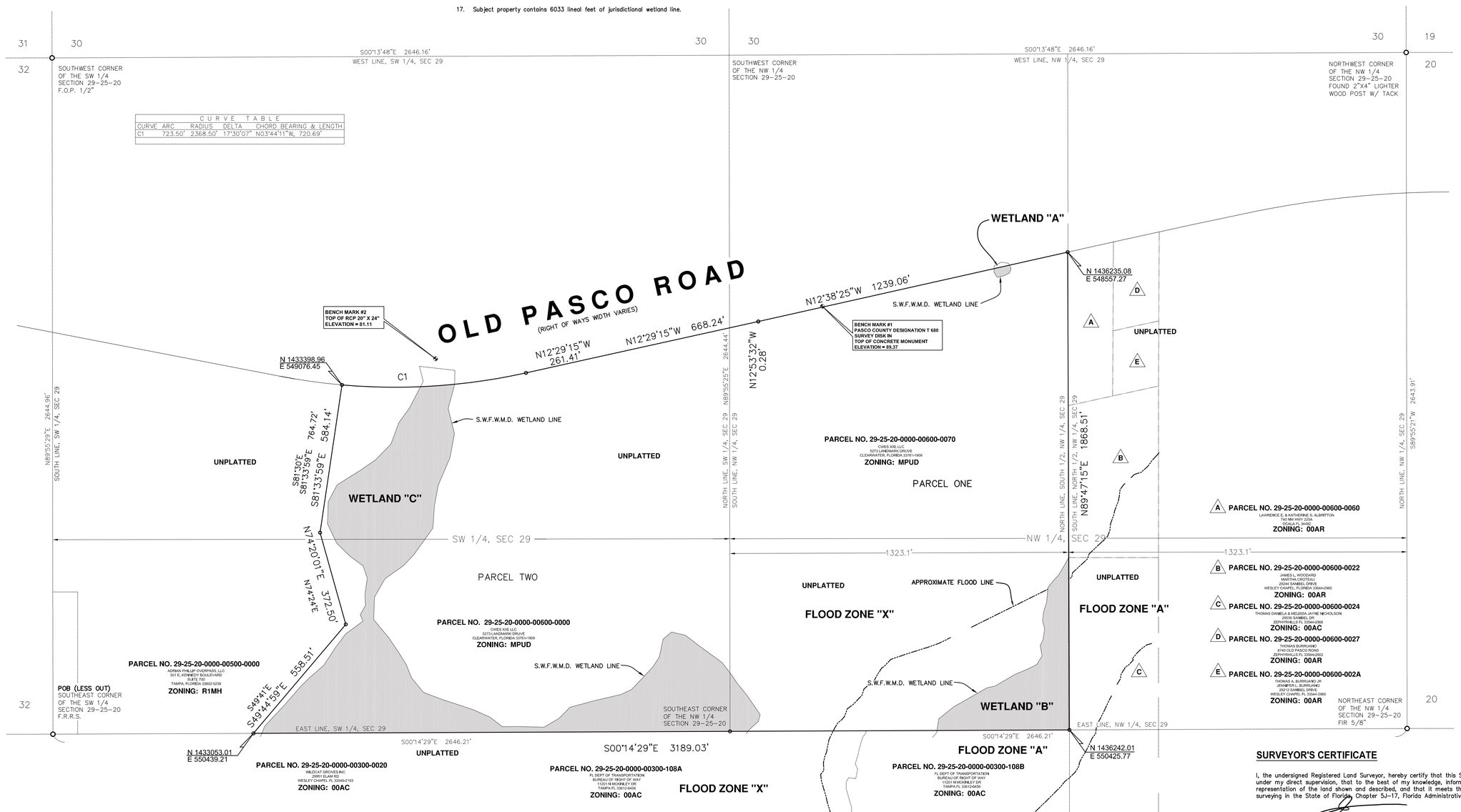
CONTAINING 104.670 ACRES, MORE OR LESS.

SURVEYOR'S REPORT

1. This survey not valid unless embossed with a raised surveyor's seal.
2. Underground encroachments such as utilities and foundations, that may exist, have not been located.
3. This survey was prepared without the benefit of a current Title Commitment, Title Opinion or Ownership and Encumbrance Report. Therefore there may be easements, rights of way or other encumbrances that are not shown on this survey that may be found in the Public Records of Pasco County, Florida.
4. The specific purpose of this survey is to delineate jurisdictional wetlands within the limits of subject property.
5. Boundary lines, bearings, distances and other related text and labels shown hereon have been taken from a Boundary Survey of the Old Pasco Road property prepared for CWES XXI, LLC by Polaris Associates, Inc., Job No. 4335-01 and dated October 26, 2013.
6. Legal description shown hereon has been taken from a Boundary Survey of the Old Pasco Road property prepared for CWES XXI, LLC by Polaris Associates, Inc., Job No. 4335-01 and dated October 26, 2013.
7. Coordinates shown hereon are relative to the Florida State Plane Coordinate System, West Zone, 1983-2007 adjustment.
8. Subject property lies within Flood Zone(s) "A" and "X", according to Flood Insurance Rate Map 120230 0375 D, prepared by the Federal Emergency Management Agency, last revised September 30, 1992 (Map Index No. 120230 INDO).
9. Parcel numbers, owners name, address and zoning obtained from the Pasco County Property Appraisers web site.
10. Elevations shown hereon are relative to the North American Vertical Datum (NAVD) of 1988.
11. Parent/On-site bench mark is Pasco County Bench Mark No. T-680, a concrete monument that lies 29 feet North of the center line of Gillette Road and 39.3 feet East of the centerline of Old Pasco Road. Elevation = 89.37'
12. Wetland lines, flags and Seasonal High Water marks were delineated by Flatwoods Consulting Group, Inc. 10150 Highland Manor Drive, Suite 200, Tampa, Florida 33610.
13. Subject property contains 104.68 acres, more or less.
14. Subject property contains 88.14 acres, more or less of upland.
15. Subject property contains 16.54 acres, more or less of jurisdictional wetland.
16. A total of 6318 lineal feet of jurisdictional wetland line was delineated for the preparation of this survey.
17. Subject property contains 6033 lineal feet of jurisdictional wetland line.

W
S
E
100' 50' 0 100' 200'
SCALE: 1" = 100'

LOCATION MAP
(NOT TO SCALE)



CURVE TABLE				
CURVE	ARC	RADIUS	DELTA	CHORD BEARING & LENGTH
C1	723.50'	2368.50'	17°30'07"	N03°44'11"W, 720.69'

SURVEYOR'S CERTIFICATE

I, the undersigned Registered Land Surveyor, hereby certify that this Specific Purpose Survey was prepared under my direct supervision, that to the best of my knowledge, information and belief is a true and accurate representation of the land shown and described, and that it meets the Minimum Technical Standards for land surveying in the State of Florida, Chapter 5J-17, Florida Administrative Code.

DENNIS J. BENHAM, PSM
STATE OF FLORIDA CERTIFICATION NO. 4697

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12441 Adventure Dr ~ Ruskin, Florida 33570
Phone: 813.741.1555 ~ Fax: 813.741.1553
LB # 7243
WWW.CROSSTOWNSURVEYORS.COM

NO.	DATE:	REVISION
1	01.07.14	UPDATE & REVISE BOUNDARY

PREPARED FOR:
CWES XXI, LLC
334 EAST LAKE ROAD #172
PALM HARBOR, FLORIDA 34685-2627
TELEPHONE: (727) 787-6330

PROJECT NAME:
OLD PASCO ROAD PARCEL
WESLEY CHAPEL, FLORIDA

SHEET TITLE:
SPECIFIC PURPOSE SURVEY
(JURISDICTIONAL WETLAND LINES)

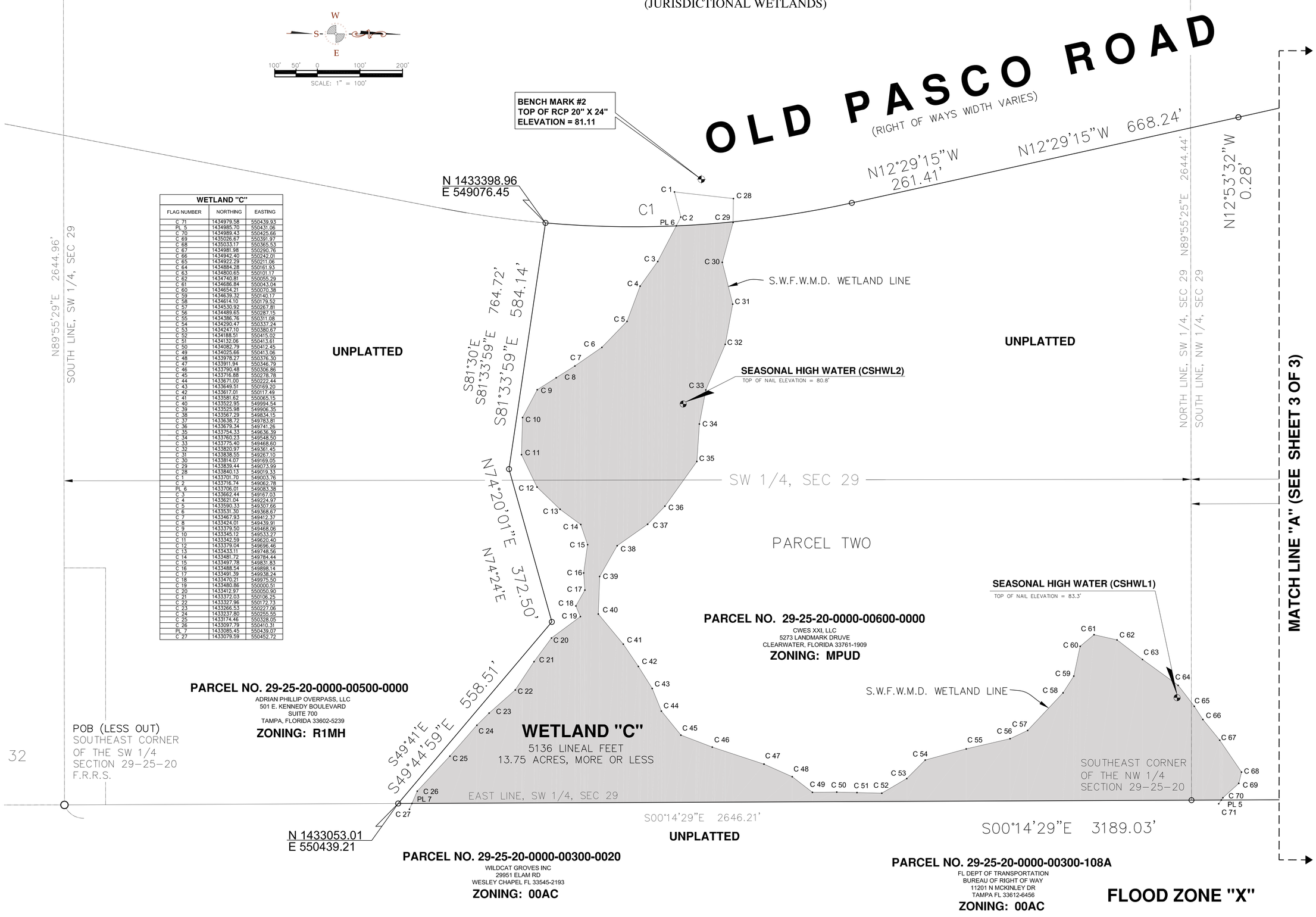
P.N. 14001
SCALE: 1"= 30'
DATE: 02.23.2014
CREW CHIEF: M.J.
DRAWN BY: S.W.
CHECKED BY: D.J.B.

SHEET 1 OF 3

Plot Date: Mar 27, 2014 - 8:08am
User Name: Scott Walker
Drawing Name: \\tsclient\F\Land Projects R2\Crosstown\14021 Old Pasco\dwg\14021 Wetland.dwg

SPECIFIC PURPOSE SURVEY
(JURISDICTIONAL WETLANDS)

SECTION 29, TOWNSHIP 25 SOUTH, RANGE 20 EAST
PASCO COUNTY, FLORIDA



WETLAND "C"		
FLAG NUMBER	NORTHING	EASTING
C 71	1434979.58	550439.93
PL 5	1434985.70	550431.06
C 70	1434989.43	550425.66
C 69	1435026.67	550391.97
C 68	1435033.17	550365.53
C 67	1434981.98	550290.76
C 66	1434942.40	550242.01
C 65	1434922.29	550211.06
C 64	1434884.28	550161.93
C 63	1434800.65	550101.17
C 62	1434740.81	550055.29
C 61	1434686.84	550043.04
C 60	1434654.21	550070.38
C 59	1434639.32	550140.17
C 58	1434614.10	550179.52
C 57	1434530.92	550267.81
C 56	1434489.65	550287.15
C 55	1434386.76	550311.08
C 54	1434290.47	550337.24
C 53	1434247.10	550380.67
C 52	1434188.51	550415.02
C 51	1434132.06	550413.61
C 50	1434082.79	550412.45
C 49	1434025.66	550413.06
C 48	1433978.27	550376.30
C 47	1433911.94	550346.79
C 46	1433790.48	550306.86
C 45	1433716.88	550278.78
C 44	1433671.00	550222.44
C 43	1433649.51	550169.20
C 42	1433617.01	550117.49
C 41	1433581.62	550065.15
C 40	1433522.95	549994.54
C 39	1433525.98	549906.35
C 38	1433567.29	549834.15
C 37	1433638.72	549783.81
C 36	1433679.34	549741.26
C 35	1433754.33	549636.39
C 34	1433760.23	549548.50
C 33	1433775.40	549468.60
C 32	1433820.97	549361.45
C 31	1433838.55	549267.10
C 30	1433814.07	549169.05
C 29	1433839.44	549073.99
C 28	1433840.13	549019.33
C 1	1433701.70	549003.76
C 2	1433716.74	549062.78
PL 6	1433706.01	549083.38
C 3	1433662.44	549167.03
C 4	1433621.04	549224.97
C 5	1433590.33	549307.66
C 6	1433531.30	549368.67
C 7	1433467.93	549412.37
C 8	1433424.01	549439.91
C 9	1433379.50	549468.06
C 10	1433345.12	549533.27
C 11	1433342.59	549620.40
C 12	1433379.04	549696.46
C 13	1433433.11	549748.56
C 14	1433481.72	549784.44
C 15	1433497.78	549831.83
C 16	1433488.54	549898.14
C 17	1433491.39	549938.24
C 18	1433470.21	549975.50
C 19	1433480.86	550000.51
C 20	1433412.97	550050.90
C 21	1433372.03	550106.25
C 22	1433327.96	550172.73
C 23	1433266.53	550227.06
C 24	1433237.80	550255.55
C 25	1433174.46	550328.05
C 26	1433097.79	550410.31
PL 7	1433085.45	550439.07
C 27	1433079.59	550452.72

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NO.	DATE:	REVISION

PREPARED FOR:
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TELEPHONE: (727) 787-6330

PROJECT NAME:
OLD PASCO ROAD PARCEL
WESLEY CHAPEL, FLORIDA

SHEET TITLE:
SPECIFIC PURPOSE SURVEY
(JURISDICTIONAL WETLAND LINES)

P.N. 14021
SCALE: 1"= 100'
DATE:
CREW CHIEF: M.J.
DRAWN BY: S.W.
CHECKED BY: D.J.B.

SHEET 2 OF 3

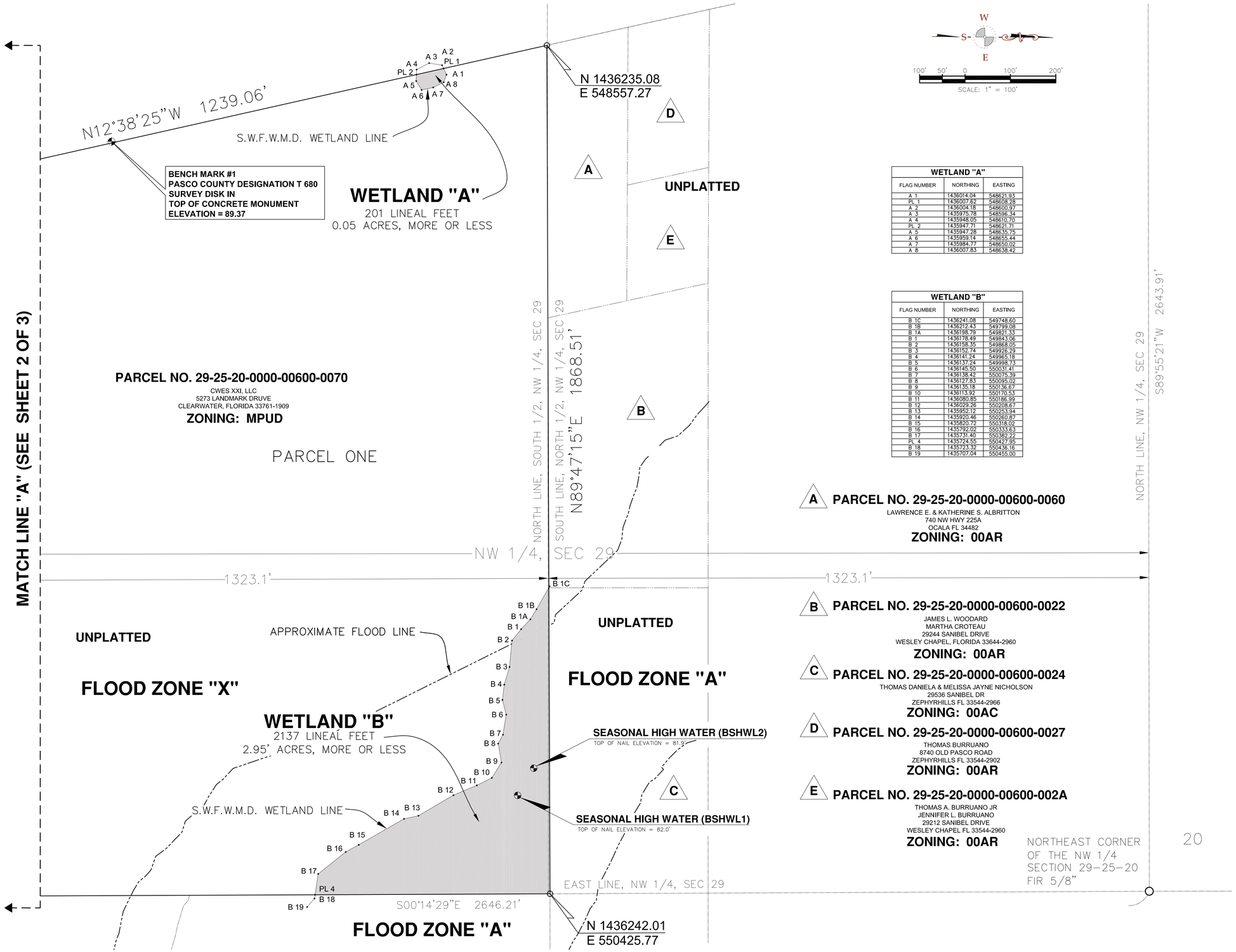
Plot Date: Mar 27, 2014 - 8:09am
User Name: WilliamS
Drawing Name: \\scifiles\FiLand Projects R2\Crosstown\14021 Old Pasco\dwg\14021 Wetland.dwg

SPECIFIC PURPOSE SURVEY

(JURISDICTIONAL WETLANDS)

SECTION 29, TOWNSHIP 25 SOUTH, RANGE 20 EAST

PASCO COUNTY, FLORIDA



WETLAND "A"		
FLAG NUMBER	NORTHING	EASTING
A 1	1436014.04	548621.93
PL 1	1436007.62	548608.28
A 2	1436004.18	548600.97
A 3	1435975.78	548596.34
A 4	1435948.05	548610.70
PL 2	1435947.71	548621.71
A 5	1435947.28	548635.75
A 6	1435959.14	548655.44
A 7	1435984.77	548650.02
A 8	1436007.83	548638.42

WETLAND "B"		
FLAG NUMBER	NORTHING	EASTING
B 1C	1436241.08	549748.60
B 1B	1436212.43	549799.08
B 1A	1436198.79	549821.33
B 1	1436178.49	549843.06
B 2	1436158.35	549868.05
B 3	1436152.74	549926.29
B 4	1436141.24	549965.18
B 5	1436137.24	549998.73
B 6	1436145.50	550031.41
B 7	1436138.42	550075.39
B 8	1436127.83	550095.02
B 9	1436135.18	550136.67
B 10	1436113.92	550170.53
B 11	1436080.85	550186.99
B 12	1436029.26	550208.67
B 13	1435952.12	550253.94
B 14	1435920.46	550260.87
B 15	1435820.72	550318.02
B 16	1435792.02	550333.63
B 17	1435731.40	550382.22
PL 4	1435724.55	550427.95
B 18	1435723.32	550436.16
B 19	1435707.04	550455.00

Plot Date: Mar 27, 2014 - 8:10am
User Name: Michael
Drawing Name: \\scdsrv\FiLand Projects R2\Crosstown\14021 Old Pasco\dwg\14021 Wetland.dwg

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Phone: 813.741.1555 – Fax: 813.741.1553
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NO.	DATE:	REVISION
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CREW CHIEF: M.J.
DRAWN BY: S.W.
CHECKED BY: D.J.B.

SHEET 3 OF 3

SECTION 29, TOWNSHIP 25 SOUTH, RANGE 20 EAST

TABLE 1: PROJECT WETLAND (WL) AND OTHER SURFACE WATER (SW) AND IMPACT SUMMARY

WL & SW ID	UMAM ASSESSMENT AREA NAMES	WL & SW TYPE	WL & SW SIZE (ACRES)	WL & SW NOT IMPACTED (ACRES)	TEMPORARY WL & SW IMPACTS		PERMANENT WL & SW IMPACTS		MITIGATION ID
					IMPACT SIZE (ACRES)	IMPACT TYPE	IMPACT SIZE (ACRES)	IMPACT TYPE	
WL-A	Wetland A	641	0.07				0.07	F	Not Required*
WL-B	Wetland B	630	2.91	2.909	0.001	O			
WL-C	Wetland C	630/641	13.6	13.59	0.01	O			

Comments: * In accordance with the SWFWMD Basis of Review Section 3.2.2.1, isolated wetlands less than one half acre in size will not be required to comply with the provisions of subsections 3.2.2 through 3.2.3.7 and 3.2.5 through 3.3.8. Therefore, the impact to Wetland A should not require mitigation.

Codes (multiple entries per cell not allowed):
• Wetland & Surface Water ID: Include ID on submitted wetland and surface water impact maps
• Wetland Type: from an established wetland classification system
• Impact Type: D=dredge; F=fill; H=change hydrology; S=shading; C=clearing; O=other

GRANTHAM RANCH EAST

PASCO COUNTY, FLORIDA

ENVIRONMENTAL NARRATIVE

Prepared For:

Mr. Thomas L. Sunderman
Project Manager
CWES XIII, LLC
334 East Lake Road #172
Palm Harbor, FL 34685-2427

April 23, 2015

Prepared by:

8306 Laurel Fair Circle•Suite 120
Tampa, FL 33610•813-600-5747

Contents

1.0 PROJECT DESCRIPTION AND PURPOSE 3
2.0 SITE DESCRIPTION 3
3.0 WETLAND AND SURFACE WATERS 3
3.1. Wetland Descriptions 3
3.2. Onsite Elimination and Reduction of Impacts 4
3.3. Wetland and Wetland Buffer Impacts 4
4.0 WILDLIFE AND LISTED SPECIES 6
5.0 CULTURAL RESOURCES 6

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Soils Map ..... Follows Report
Existing Land Use Map ..... Follows Report
Post Construction Land Use Map ..... Follows Report
Wetland Map ..... Follows Report

1.0 PROJECT DESCRIPTION AND PURPOSE

The proposed project consists of the construction of a residential community on the property (referred to herein as Grantham Ranch East) in Pasco County, Florida. Grantham Ranch East is approximately 104.5 acres and consists of two adjoining parcels, folio numbers 29-25-20-0000-00600-0000 and 29-25-20-0000-00600-0070 as listed by the Pasco County Property Appraiser. The proposed project is located in Section 29, Township 25 South, and Range 20 East. More specifically, the Grantham Ranch East property is located east of Old Pasco Road and west of I-75, north of Overpass Road.

The construction of this residential community is proposed to serve the growing population within the surrounding areas (i.e. Wesley Chapel). The residential community will include residences, a park, stormwater features, and upland and wetland conservation areas. The project proposes to temporarily impact wetlands for outfall of treated stormwater and conserve large wetland systems.

2.0 SITE DESCRIPTION

According to the Natural Resources Conservation Service (NRCS) there are six soil types mapped within the Grantham Ranch East Property (Soils Map). The soil types found within the alignment include (2) Pomona Fine Sand, (7) Sparr Fine Sand, 0 to 5 percent slopes, (8) Sellers Mucky Loamy Fine Sand, (11) Adamsville Fine Sand, (23) Basinger Fine Sand, depressional, and (69) Millhopper Fine Sand, 0 to 5 percent slopes. Three of the six soil types, Pomona Fine Sand, Sellers Mucky Loamy Fine Sand, and Basinger Fine Sand, depressional are classified as hydric according to the *Hydric Soils of Florida Handbook*.

The upland habitats as classified based on the Florida Land Use, Cover and Forms Classification System (FLUCFCS: Florida Department of Transportation, 1999) include Cropland and Pastureland (FLUCFCS 211). The property is predominantly improved pasture that is heavily grazed. Portions of the pasture appear to be used for hay production and hay bales were observed onsite. The attached Southwest Florida Water Management District (SWFWMD) Land Use Map depicts the mapped upland habitat types. The wetland communities are discussed in detail in Section 3.0. A Post Construction Land Use Map is also attached depicting the land covers that will exist on the property after project construction. These include high density residential, open land, forested uplands and wetland communities.

3.0 WETLAND AND SURFACE WATERS

Flatwoods determined the limits of wetlands onsite in accordance with The Florida Wetlands Delineation Manual (Chapter 62-340, F.A.C.) and the U.S. Army Corps of Engineers, 1987 Wetlands Delineation Manual, 2008 Supplement. The locations of the wetlands are depicted on the attached Wetland Map.

3.1. Wetland Descriptions

Three wetlands totaling 16.58 acres occur on the Grantham Ranch East Property. A general description of each wetland type, a qualitative description of each wetland within the project limits, and the proposed impacts are summarized in Table 1.

3.2. Onsite Elimination and Reduction of Impacts

Overall, the applicant has designed the project to have a minimal adverse effect on the wetland resources. The proposed project avoids permanent impacts to the large forested wetland systems onsite. The applicant prepared several iterations of the site plan in order to develop a layout that integrated the existing site features while minimizing impacts to the existing wetlands. During this design refinement process, the Pasco County School Board requested that the driveway within the proposed development be aligned with a signalized intersection proposed for a new Pasco County High School. Because of this new alignment request, the 0.07 acre, isolated Wetland A will be impacted. The project team coordinated with the Pasco County School Board regarding the location of roadway alignment.

3.3. Wetland and Wetland Buffer Impacts

As discussed above, the 0.07-acre, isolated Wetland A will be permanently impacted in its entirety as a result of the redesign of the roadway. In accordance with the SWFWMD Basis of Review Section 3.2.2.1, isolated wetlands less than one half acre in size will not be required to comply with the provisions of subsections 3.2.2 through 3.2.3.7 and 3.2.5 through 3.3.8. Therefore, the impact to Wetland A should not require mitigation.

Temporary impacts to Wetlands B and C are proposed in order to construct hydraulic connections from the onsite stormwater management system. Wetland B and C will result in the temporary impact of 0.001-acre (50 SF) and 0.01-acre (510 SF), respectively, as a result of the hydrologic connections. Because of the temporary nature and size of the impacts, no mitigation is proposed for the 0.011-acre of temporary impact to Wetlands B and C.

Within some areas adjacent to Wetlands B and C, the topography of the site necessitated transitional slope grading which does not allow for an average 25 foot wide wetland buffer. Slopes were necessary in order to meet grading constraints of the site. In some instances, retaining walls are utilized in order to both minimize buffer impacts and eliminate wetland impacts. In the areas where a 25 foot wetland buffer cannot be maintained, the buffers will be planted with native vegetation such as cypress, red maple, magnolia, and wax myrtle. These plantings will improve the condition of the remaining portion of wetland buffer. In the current condition, Wetlands B and C are buffered by non-native, grazed pasture grasses. In the proposed landscape, wetland buffers will be planted with native vegetation as described. All plants will be purchased from a nursery or collected.

Please see the Permit Drawings submitted with this application depicting a plan view of the wetland impacts. The Landscape Plan included in the Permit Drawings depicts the proposed buffer plantings for Wetlands B and C.

Table 1. Wetland Descriptions and Wetland Impacts

Wetland ID	FLUCCS[1] Code	Size (Acres)	Temporary Impact (Acres)	Permanent Fill Impact (Acres)	Permanent Dredge Impact (Acres)	WL[2] or SW[3]	Wetland Descriptions
WL-A	641	0.07	0.0	0.07	0.0	WL	Small herbaceous depressional wetland. The center of the wetland contains smartweed, manyflower marshpennywort, and frogfruit and the edge contains yellow bristlegrass, tropical flatsedge, grassleaf rush, Bahia grass, Bermuda grass and ragweed.
WL-B	630	2.91	0.001	0.0	0.0	WL	Forested wetland with a dominant canopy of red maple, water oak, sweetbay and slash pine. Herbaceous species include netted chain fern, Virginia chain fern, and maidencane. Shrubs include wax myrtle.
WL-C	630/641	13.6	0.01	0.0	0.0	WL	The forested portion of Wetland C is similar to Wetland B in composition, although also contains loblolly bay. The herbaceous portion of Wetland C is comprised of bulltongue arrowhead, button bush, Peruvian primrose willow, Carolina willow, danglepod, smartweed, manyflower marshpennywort, netted chain fern, and maidencane.
Site Totals		**16.58**	**0.011**	**0.07**	**0.0**		

1 FLUCCS = Florida Land Use and Cover Classification System; FLUCCS 630 = Wetland Forested Mixed; 641 = Freshwater Marshes
2 WL = Wetland
3 SW = Surface Water

4.0 WILDLIFE AND LISTED SPECIES

Flatwoods conducted survey for species considered Endangered, Threatened, or of Special Concern by the U.S. Fish and Wildlife Service (FWS) under 50 CFR 11-12 or the Florida Fish and Wildlife Conservation Commission (FWC) under Chapter 68A-27 F.A.C in accordance with the FWC Florida Wildlife Conservation Guide.

No impacts to listed species are anticipated as a result of the proposed project. Suitable listed wading bird foraging and nesting habitats will remain. According to the FWS wood stork colony database, the project falls within the Core Foraging Area (CFA) wood stork colonies; however, is not within the Primary Zone (within 1500 feet) or the Secondary Zone (1501 – 2500 feet) of any colony. Wood stork nesting and foraging habitat should not be impacted by the project. The permanent impact proposed on the site will not occur within suitable foraging habitat.

A survey to locate gopher tortoise (*Gopherus polyphemus*) burrows and estimate a project density was conducted in accordance with the FWC methods as outlined in the Gopher Tortoise Permitting Guidelines April 2008 (revised February 2015). Because gopher tortoise burrows were found during the survey, a relocation permit from the FWC may be required. A survey in accordance with the guidelines will be conducted prior to construction activities and a relocation permit obtained as necessary. If an eastern indigo snake is discovered during the relocation, no work will commence until the snake has vacated the vicinity. In addition, the applicant will agree to abide by U.S. Fish and Wildlife Service's *"Standard Protection Measures for the Eastern Indigo Snake"* dated February 12, 2004.

5.0 CULTURAL RESOURCES

A Cultural Resource Assessment Survey (CRAS) has been conducted for the site. One archaeological site, 8PA2063, was identified within the proposed development property. This site is considered ineligible for listing in the National Register of Historic Places (NRHP) or the Pasco County Register of Historic Places (PCRHP) due to its commonality of type and limited research potential. Therefore, the proposed development will have no effect on archaeological sites or historic resources that are listed, determined eligible, or considered potentially eligible for listing in the NRHP, PCRHP, or otherwise of historical or archaeological value. State Historic Preservation Officer (SHPO) concurrence will be forwarded once it is received.

FIGURES

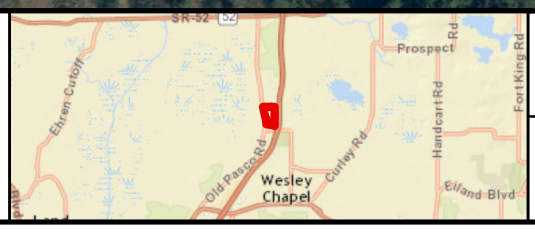
Feet
0 250
1 in = 250 feet

FLATWOODS Consulting Group

CWES XIII, LLC
GRANTHAM RANCH EAST

PASCO COUNTY, FLORIDA

Project Area
Soil



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SOILS MAP

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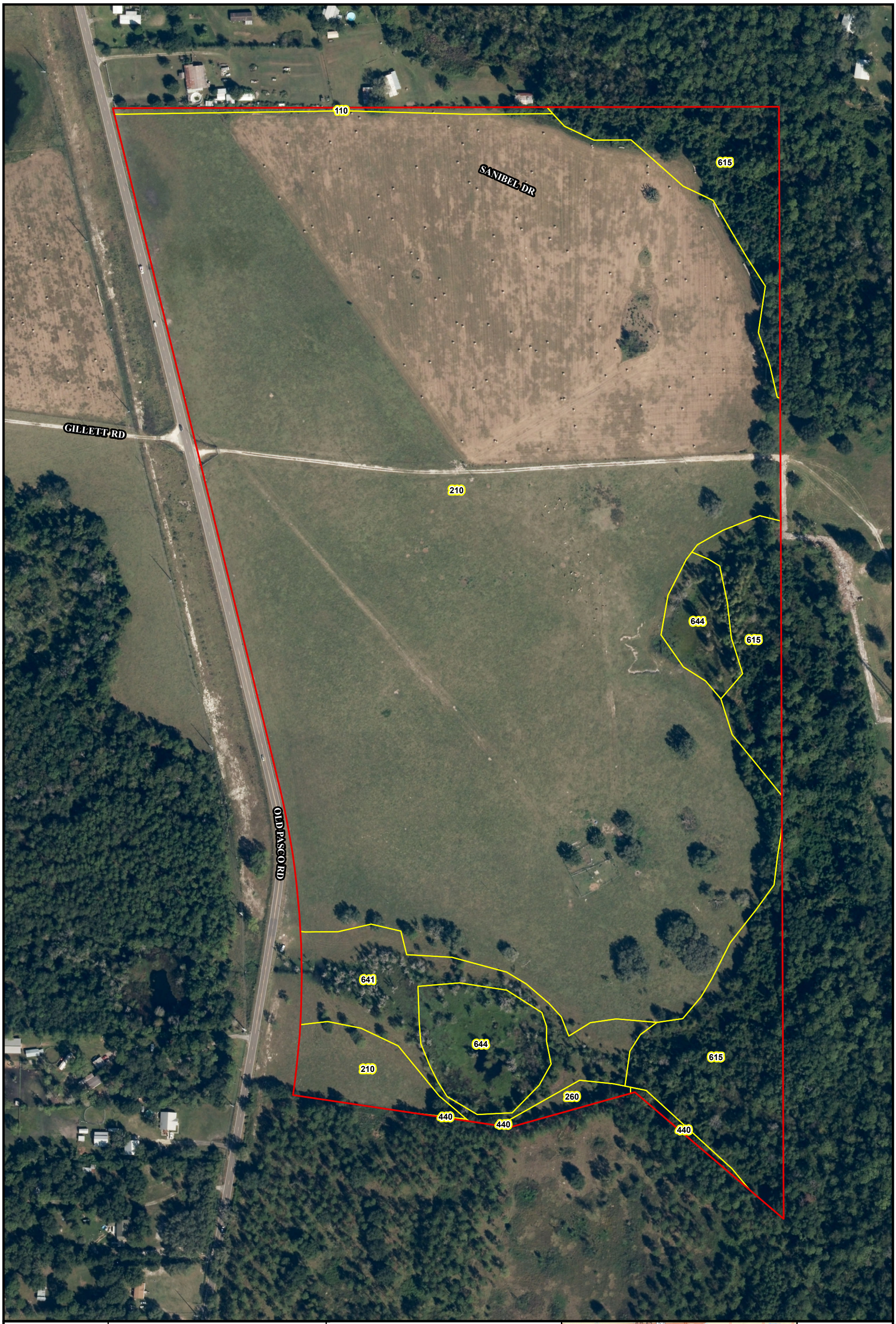

Feet
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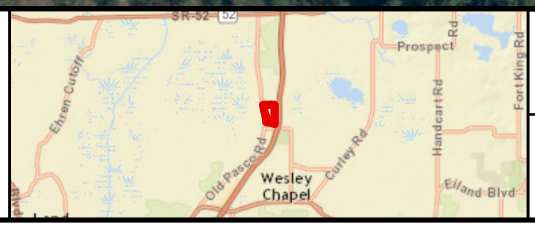
1 in = 250 feet

FLATWOODS Consulting Group

CWES XIII, LLC
GRANTHAM RANCH EAST

PASCO COUNTY, FLORIDA

Project Area
Land Use



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EXISTING LAND USE MAP

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Feet
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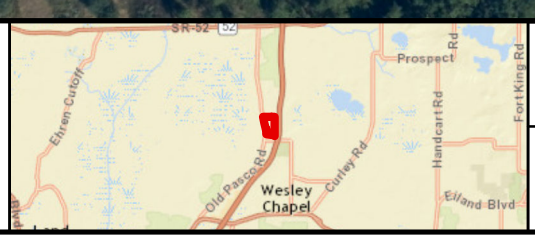
1 in = 250 feet

FLATWOODS Consulting Group

CWES XIII, LLC
GRANTHAM RANCH EAST

PASCO COUNTY, FLORIDA

Project Area
Land Use



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POST CONSTRUCTION LAND USE MAP

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Wetland A

Wetland B

SANIBEL DR

GILLETT RD

OLD PASCO RD

Wetland C

Feet

0 250

1 in = 250 feet

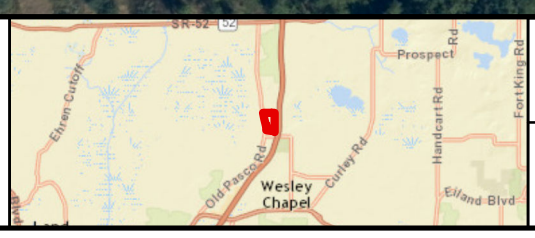
FLATWOODS Consulting Group

CWES XIII, LLC
GRANTHAM RANCH EAST

PASCO COUNTY, FLORIDA

Project Area

Wetland



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WETLAND MAP

P:\0070CWE\003-Old Pasco Road\GIS\WETLANDS 04162015.mxd

November 3, 2014

Ms. Elizabeth Rodriguez
Elizabeth Rodriguez & Associates
4846 Trinidad Drive
Land O'Lakes, Florida 34639

Re: Substandard Road Assessment Review
Grantham Ranch MPUD – TIS# 14-62

Dear Ms. Rodriguez:

This letter summarizes our review of the revised Substandard Road Analysis for the above-referenced Grantham Ranch MPUD development, prepared by Elizabeth Rodriguez & Associates (October 2014) and provided via email on October 22, 2014. .The October report was revised based on comments provided by Tindale Oliver on September 25, 2014. The review, documented herein, was undertaken consistent with the requirements outlined in the Pasco County *Land Development Code Section 901.4: Substandard Roadway Analysis and Mitigation*. Our review comments are listed below.

1. All previous comments were addressed.
2. Old Pasco Road from SR-52 to SR-54
    a. Lane width analysis is acceptable and indicates that the roadway is generally standard.
    b. Pavement condition analysis is acceptable
    c. Flooding analysis is acceptable
    d. Side slope analysis is acceptable
    e. Clear zone analysis is acceptable
    f. No railroad crossing analysis is required
    g. <u>Based on the report and this review, this road is considered standard.</u>
3. Overpass Road from Old Pasco Road to Boyette Road
    a. Lane width analysis is acceptable and indicates that the roadway is generally standard.
    b. Pavement condition analysis is acceptable
    c. Flooding analysis is acceptable
    d. Side slope analysis is acceptable
    e. Clear zone analysis is acceptable
    f. No railroad crossing analysis is required
    g. <u>Based on the report and this review, this road is considered standard.</u>

GREAT INSIGHTS. GREATER OUTCOMES.

4. Boyette Road from Overpass Road to SR-54
    a. Lane width, pavement condition, side slope, clear-zone analyses were based on the Boyette Road Route Study and a windshield survey. This analysis is acceptable and the roadway is considered to be standard.
    b. Flooding analysis is acceptable
    c. **Based on the report and this review, this road is considered standard.**
5. Oakley Road from Old Pasco to SR 54
    a. Lane width, pavement condition, side slope, clear-zone analyses were based on the Grove DRI's D.O. requirements and a windshield survey. This analysis is acceptable and the roadway is considered to be standard.
    b. Flooding analysis is acceptable
    c. **Based on the report and this review, this road is considered standard.**

Based on the analysis and this review, all roadways required for a Substandard Road Review are considered to be standard roadways per the requirements of the LDC.

Sincerely,
TINDALE OLIVER

W.T. Bowman, P.E.
Senior Project Manager

Cc: Sam Beneck, Pasco County
Ali Atefi, Pasco County
Aurybel Rivero, Pasco County
Corelynn Burns, Pasco County

J:\~Client 400 - 499\420083-01.14 Grantham Ranch\docs\Updates Analysis 110314\Grantham Ranch SS Road 110314.docx

FORM 901.3.A

PASCO COUNTY
ACCESS CONNECTION PERMIT APPLICATION

The following information is required from all applicants directly or indirectly accessing any collector or arterial road or as otherwise directed by the County Engineer:

Basic Information:

Step 1. Name of Project: GRANTHAM RANCH EAST

County Assigned Project No.: _____

Project Location (road name/vicinity): EAST SIDE OF OLD PASCO ROAD AT GILLETTE RD.

Speed Limit: 45 MPH

Step 2. Existing Property Use (size in square feet and/or the number of units, etc.):

AGRICULTURE

Step 3. Proposed property use, including any interim traffic generating uses such as heavy vehicles in brackets [ ] (size in square feet and the number of units):

225 SINGLE UNIT DETACHED RESIDENTIAL HOMES

Step 4. Provide the location of all existing and proposed connections to the property. This will include a location map and site plan of any physical features (existing and/or proposed) that will have an impact on traffic circulation and sight distance on the County road system and may include an aerial photograph. Examples of such physical features are walls, fences, trees, gates, utility poles, etc.:

EXISTING POINT OF CONNECTION IS GILLETT ROAD; PROPOSED DEVELOPMENT WILL HAVE TWO POINTS OF CONNECTION.

SEE ATTACHED PLANS FOR PROPOSED DRIVEWAY LOCATIONS AND NEARBY PHYICAL FEATURES.

Step 5. Describe any unique traffic-safety issues with the access; i.e., sight-distance problems:

NONE NOTED

Step 6. Trip Generation Data and Total Daily Trip Generation: The *Institute of Transportation Engineers* (ITE) *Handbook*, latest edition, is acceptable as a source. Other sources may be required by and/or authorized of the County Engineer. Land excavation and mining (as defined in Appendix A) and removal of more than 30,000 cubic yards, even as an interim use, is presumed to be a separate and

distinct land use requiring separate trip generation estimates. Such land use is also presumed to generate more than ten (10) percent heavy vehicles. Heavy vehicles adversely affect traffic, because they occupy more roadway space and have poorer operating capabilities than passenger cars, particularly with regard to acceleration, deceleration, and the ability to maintain speed on upgrades. Accordingly, for trip generation purposes, if heavy vehicles are ten (10) percent or more of the trips generated by the proposed land use, the total estimated trips for heavy vehicles shall be multiplied by two (2) unless ITE heavy vehicle data or other County-approved heavy vehicle trip generation data for the land use support a different multiplier; however, in no event shall the multiplier be less than one (1). Provide trip generation from interim traffic generating uses in brackets [ ].

SEE GRANTHAM RANCH EAST APPROVED TIMING AND PHASING ANALYSIS

Source: _____

ITE code (if used): _____

Existing maximum daily trip generation: _____ (1)

Net increase in maximum daily trip generation: _____ (2)

Total maximum daily trip generation: _____ (Add 1 & 2)

Estimated daily trips from heavy vehicles* included in the total maximum:

_____ (a)

Heavy vehicle multiplier _____ (b)

Additional heavy vehicle trips (multiply a X b-1) _____ (c)

If (c) is ≥ ten (10) percent of total maximum daily trip generation, list additional heavy vehicle trips from (c) _____ (3).

Total maximum daily trip generation with heavy vehicles _____ (Add 1, 2, & 3)

If the total maximum daily trip generation from Step 6 above does not exceed the thresholds set forth in Exhibit 901.5.A, "Size of Development that Generates 100 Daily Driveway Trips," no further information is required. However, a substandard road fair-share payment pursuant to this Code, Section 901.4, as it may be amended from time-to-time, may still be required.

If the total maximum daily trip generation from Step 6 above exceeds the thresholds set forth in Exhibit 901.4.A, "Size of Development that Generates 100 Daily Driveway Trips," then Steps 7 and 8 are required to be completed. Step 7 is required prior to proceeding with "Turn Lane Warrants and Design Criteria," and Step 8 is required to address any substandard road issues.

In addition, a project shall be required to complete a TIS in accordance with this Code, Section 901.5, unless such project is exempt from TIS requirements pursuant to this Code, Section 1301. Notwithstanding the foregoing, the County Engineer may require more detailed access-management information or a more detailed access management study where the County Engineer determines (1) that the information

on the Access Connection Permit Application Form 901.3.A or in the TIS is inadequate to determine compliance with the access management regulations or (2) that the information or study is necessary to ensure the safety of the traveling public.

Additional traffic data required for projects exceeding 100 driveway trips per day unless a TIS is required pursuant to this Code, Section 1301:

Step 7. Existing counts on the public roadway (www.pascocountyfl.net. Recent data, if available on this website, may be acceptable):

a. P.M. peak _____ NB _____ SB _____ EB _____ WB

A.M. peak _____ NB _____ SB _____ EB _____ WB

Total daily count: _____

Date and source of the count: _____

b. Using the ITE *Trip Generation Handbook* or trip rates as approved by the County, provide trip generation of the proposed site during a.m. and p.m. peak periods of the adjacent public road. Provide trip generation from interim traffic generating uses in brackets [ ].

P.M. peak hour trips: _____

A.M. peak hour trips: _____

If additional heavy vehicle trips from Step 6 are ≥ ten (10) percent of the total maximum

Daily Trip Generation: Provide additional a.m. and p.m. peak hour trips for heavy vehicles utilizing the same multiplier and formula from Step 6:

Additional heavy vehicle
p.m. peak hour trips: _____

Additional heavy vehicle
a.m. peak hour trips: _____

Total p.m. peak hour trips
with heavy vehicle trips: _____

Total a.m. peak hour trips
with heavy vehicle trips: _____

c. Provide a sketch illustrating the distribution of the project traffic during the a.m. and p.m. peak periods of the adjacent public road.

↑
N

Proceed with Warrants and Turn Lane Design Criteria.

Step 8. Perform a Substandard Roadway Analysis in accordance with this Code, Section 901.4.

SEE GRANTHAM RANCH EAST APPROVED SUBSTANDARD ROADWAY ANALYSIS.

TURN LANE WARRANTS AND DESIGN CRITERIA

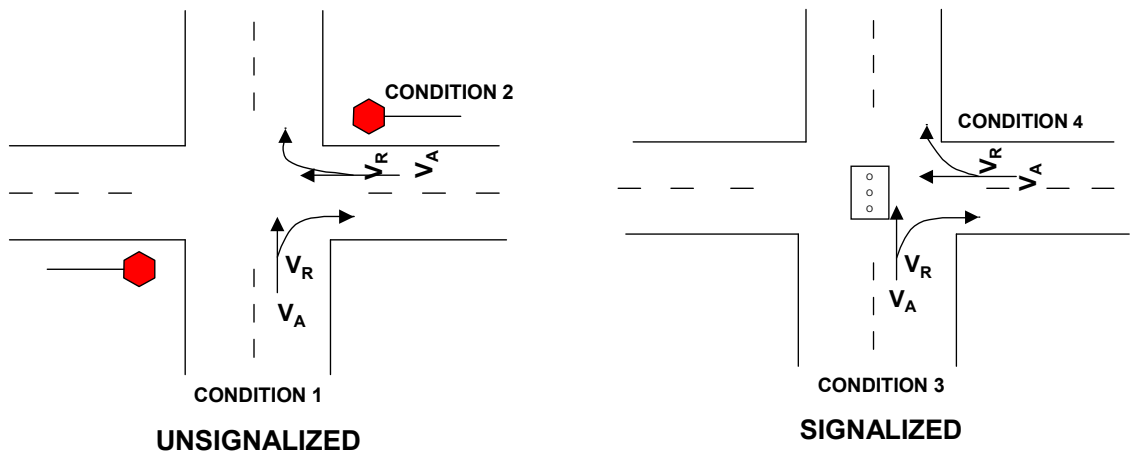
DEFINITIONS OF TERMS

Access Road	Driveways or roads connecting developments, such as shopping centers or office parks, to major roads and do not serve major road through traffic.
Vehicles Per Hour (VPH)	The design hourly volume during the peak fifteen (15) minutes of the highest peak hour expressed in terms of VPH (peak fifteen [15] minute volume times four [4]).
V_A—Approaching Volume (VPH)	Total volume approaching the intersection from the subject direction includes right and left turning and through vehicles.
V_O—Opposing Volume (VPH)	Total volume approaching the intersection from the opposite direction.
V_L—Left Turning Volume (VPH)	Volume of vehicles turning left at the subject intersection.
V_R—Right Turning Volume (VPH)	Volume of vehicles turning right at the subject intersection.
% of Left Turns in V_A	Volume of left turning vehicles divided by the approaching volume at the subject intersection.

TABLE 1

Right Turn Warrants

Unsignalized		
Condition 1	On major roads without stop control (approach).	See Graph Nos. 1A and 1B
Condition 2	Access roads or major through roads with stop control (approach).	$V_R \geq 150$ **OR** There are 5 or more related accidents in 1 year.
Signalized		
Condition 3	On major roads (approach).	$V_R \geq 150$ **AND** The total outside lane approach volume (VA) is at least 200 VPH (including right turn). **OR** There are 5 or more related accidents in 1 year.
Condition 4	On access roads approach.	$V_R \geq 150$ **OR** There are 5 or more related accidents in 1 year.



NOTES:

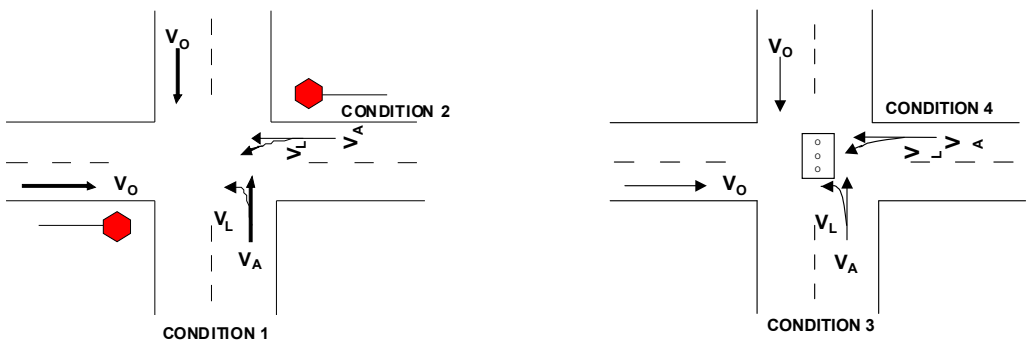
1. When public safety so requires due to site specific conditions, such as limited sight distance, high traveling speed, or the presence of a significant percentage of heavy vehicles, a turn lane may be required by the County Engineer even though the criteria in Graphs 1A and 1B are not met.

2. The provisions of the Right Turn Warrants may be modified by the County Engineer if it is determined that due to site specific constraints, the implementation will not be feasible or practical.

TABLE 2

Left Turn Warrants

Unsignalized		
Condition 1	On major roads without stop control (approach).	See Graph Nos. 2A through 2D
Condition 2	On access roads or through roads (approach).	$V_L \geq 100$ **OR** There are 4 or more related accidents in 1 year.
Signalized		
Condition 3	On major roads (approach).	$V_L \geq 100$ **OR** 20 percent or more of the total approach volume in the inside lane is left turn. **OR** There are 5 or more related accidents in 1 year.
Condition 4	On access roads or through roads approach.	$V_L \geq 100$ **OR** There are 5 or more related accidents in 1 year.



NOTES:

1. An exclusive left turn lane at signalized intersections or on access roads and through roads with stop control are more often needed to reduce the total delay to the approaching vehicles; therefore, use of traffic engineering software, with the approval of the County Engineer, may be used.

2. When public safety so requires due to site specific conditions, such as limited sight distance, high traveling speed, or the presence of a significant percentage of heavy vehicles, a turn lane may be required by the County Engineer even though the criteria in Graphs 2A through 2D are not met.

3. The provisions of the left turn warrants may be modified by the County Engineer if it is determined that due to site specific constraints, the implementation will not be feasible or practical.

4. A dual left turn lane may be required by the County Engineer when the left turn volume exceeds 300 VPH.

5. At high speed (greater than forty-five [45] mph), unsignalized/signalized intersections, a separate left turn lane may be required by the County Engineer for safe operations. A high speed shall be the greater of the posted or operating speed where an operating speed study has been conducted.

TABLE 3

Right Turn Lane Length
(Deceleration and Storage)

Unsignalized		
Condition 1	On major roads without stop control and on major through roads with stop control (approach).	Deceleration Length: FDOT Index 301 Storage Length: 25 feet desirable unless there are site-specific conditions that require a longer storage length.
Condition 2	On access roads (approach).	Deceleration Length: Taper only Storage Length = $V_R/2$
Signalized		
Condition 3	On major roads (approach).	Deceleration Length: FDOT Index 301 Storage Length = $V_R/2$
Condition 4	On access roads (approach).	Deceleration Length: FDOT Index 301 Storage Length = $V_R/2$

NOTES**:**

1. In many instances, the storage length of a right turn lane at signalized intersections or access/major roads with stop control is dictated by the required storage length for left and/or through movements. Refer to the left turn section for determining the storage length for a left turn.

2. If the right turn flow is limited due to heavy volume of conflicting movements, then the storage length shall be based on the left turn storage length formula.

3. The provision of storage lengths and deceleration lengths may be modified or waived by the County Engineer if it is determined that, due to site specific constraints, the implementation will not be feasible or practical.

4. Traffic engineering software, with the approval of the County Engineer, may be used to determine the storage length for right turns.

TABLE 4

Left Turn Lane Lengths
(Deceleration and Storage)

Unsignalized		
Condition 1	On major roads (approach).	Deceleration Length: FDOT Index 301 Storage Length = 25 X V_L/30
Condition 2	On access roads (approach).	Deceleration Length: Taper only Storage Length = 25 X V_L/30
Signalized		
Condition 3	On major roads (approach).	Deceleration Length: FDOT Index 301 Storage Length = 2 X 25 X V_L/N
Condition 4	On access roads (approach).	Deceleration Length: FDOT Index 301 Storage Length = 2 X 25 X V_L/N

NOTES**:**

1. N = The number of traffic signal cycles per hour. Use thirty (30) as a default (assumes 120-second cycle length).

2. If the formula yields a storage length of less than fifty (50) feet for unsignalized intersections, then a minimum storage of fifty (50) feet shall be provided.

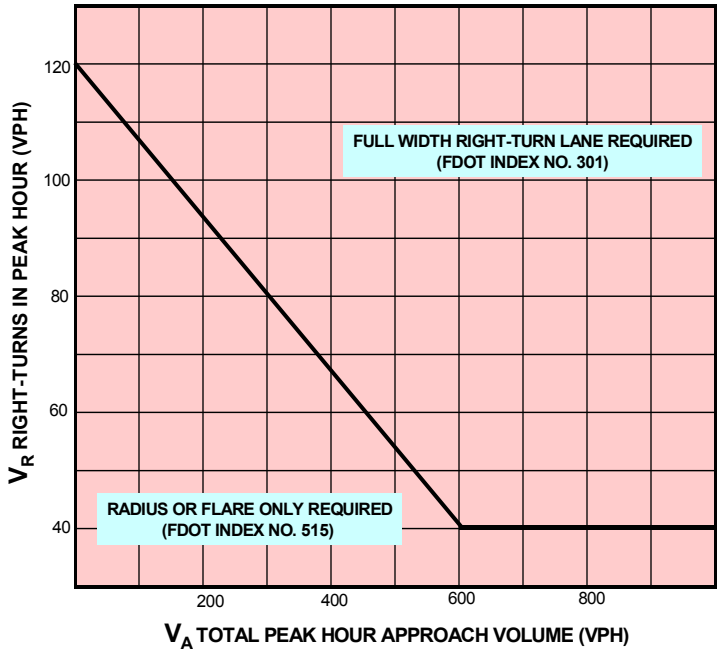
3. If the formula yields a storage length of less than 100 feet for signalized intersections, then a minimum storage of 100 feet shall be provided.

4. The provision of storage and deceleration lengths may be modified or waived by the County Engineer if it is determined that due to site specific constraints, the implementation will not be feasible or practical.

5. In some instances at signalized intersections or on access/major roads with stop control, the storage length of the left turn is dictated by the through or right movements. Unless otherwise approved by the County Engineer, the storage length for all movements shall be calculated and the highest length shall be used. For through storage length, the same formula as the left turn can be used. Refer to right turn section for determining the storage length for right turns.

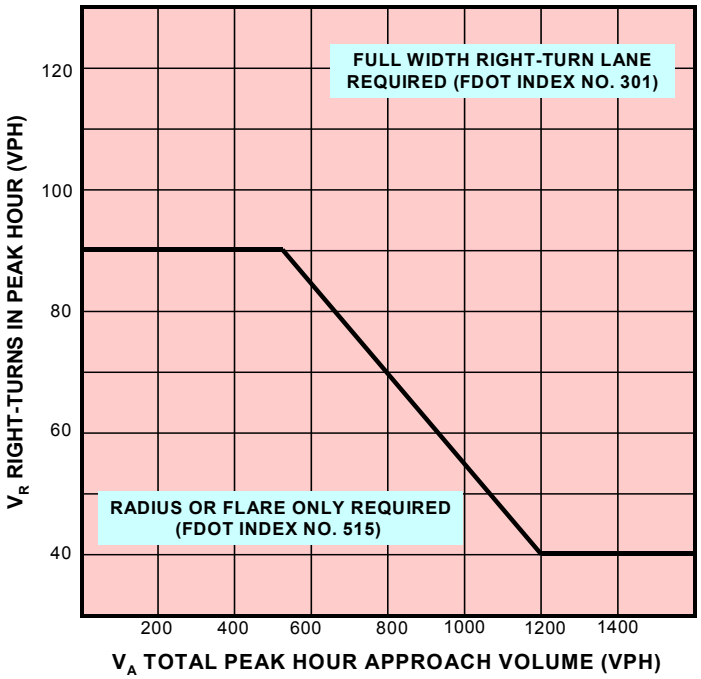
6. Traffic engineering software, with the approval of the County Engineer, may be used to determine the storage length for right turns.

GRAPH 1A. RIGHT-TURN LANE WARRANTS – TWO-LANE FACILITIES



NOTE: For posted speeds at or under forty-five (45) mph, peak hour right turns greater than forty (40) VPH, and total peak hour approach less than 300 VPH, adjust right turn volumes. Adjust peak hour right turns = peak hour right turns—twenty (20).

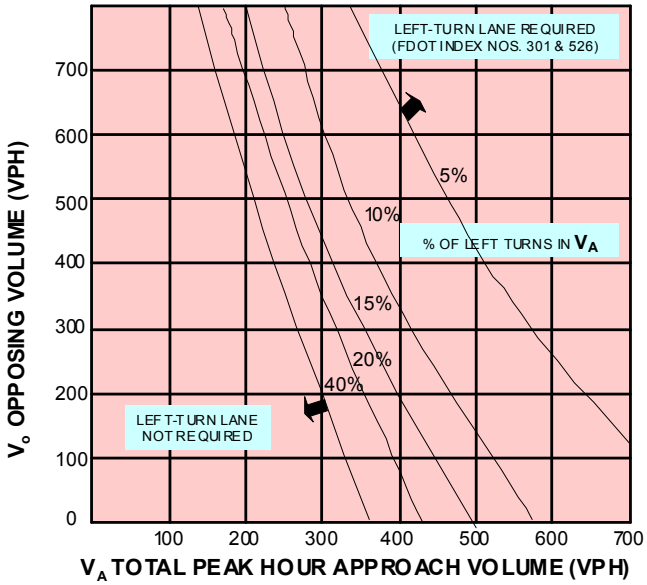
GRAPH 1B. RIGHT-TURN LANE WARRANTS
FOUR- OR SIX-LANE FACILITIES



NOTE: For application on high speed highways.

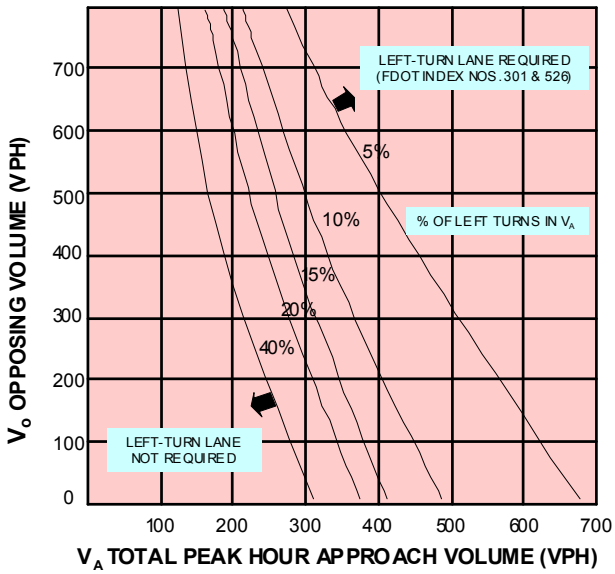
Graphs 1A & 1B Source: National Cooperative Highway Research Program, Report No. 279.

GRAPH 2A. LEFT-TURN LANE WARRANTS – TWO-LANE FACILITIES (≤ 40 MPH)



NOTE: Left-turn lane not required when intersection of V_A and V_O is below the curve corresponding to the % of left turns in V_A.

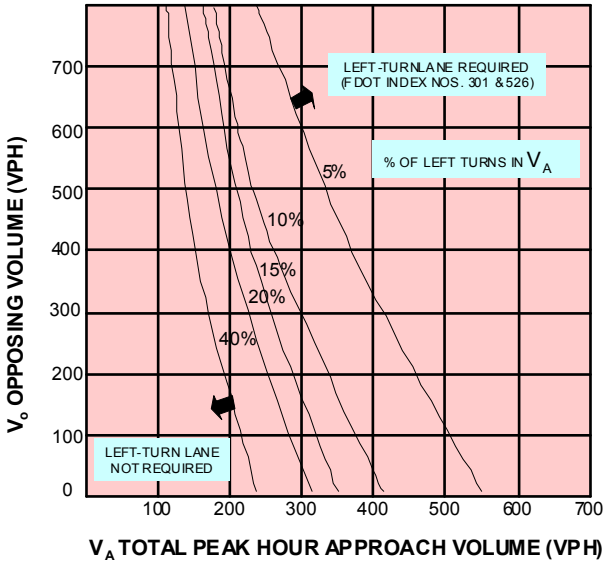
GRAPH 2B. LEFT-TURN LANE WARRANTS – TWO-LANE FACILITIES (45-50 MPH)



NOTE: Left-turn lane not required when intersection of V_A and V_O is below the curve corresponding to the % of left turns in V_A.

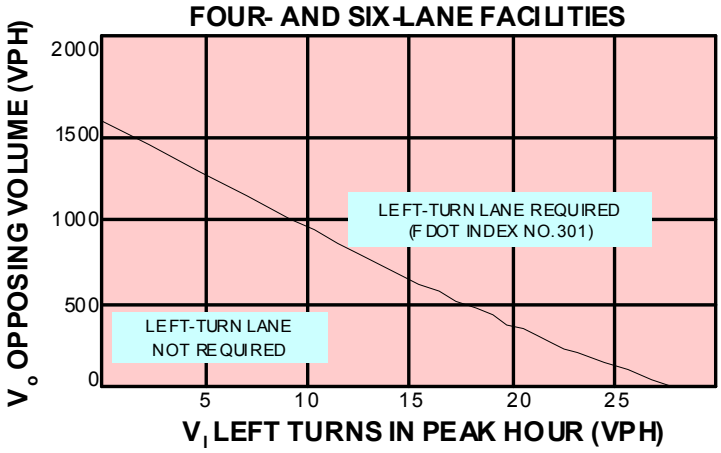
Graphs 2A & 2B Source: National Cooperative Highway Research Program, Report No. 279.

GRAPH 2C. LEFT-TURN LANE WARRANTS – TWO-LANE FACILITIES (55-60 MPH)



NOTE: Left-turn lane not required when intersection of V_A and V_O is below the curve corresponding to the % of left turns in V_A.

GRAPH 2D. LEFT-TURN LANE WARRANTS – FOUR- AND SIX-LANE FACILITIES



NOTE: When $V_O < 400$ VPH, a left-turn lane is not normally warranted unless the advancing volume (V_A) in the same direction as left-turning traffic exceeds 400 VPH. ($V_A > 400$ VPH).

Graphs 2C & 2D Source: National Cooperative Highway Research Program, Report No. 279.

SAMPLE PROBLEM NO. 1

Steps 1-6

1. Ninety-four (94) unit apartment complex. West side of Rowan Road, north of Nebraska Avenue (Main Street). Four (4) lane urban. Speed limit forty-five (45) mph.

2. Existing use—vacant.

3. Proposed use—apartments.

4. Site plan, etc., not included in sample.

5. Proposed access on Rowan Road, west side, at existing median opening, approximately 365 feet north of Indiana Avenue. No existing turn lane facilities north or southbound. No other access to this site is proposed.

6. Source: ITE, 6th Edition
   ITE Code: 220
   Existing Maximum Trip Generation: 0
   Net Increase in Maximum Trip Generation: 698
   From ITE: No. of Trips = (5.994 X 94 units) + 134.114 = 698
   Total Maximum Daily Trip Generation: 698

If the total maximum daily trip generation is greater than 100 and no TIS is required pursuant to this Code, Section 1301, proceed with Step 7.

Step 7

7. From the Pasco County Traffic Operations Division, Traffic Count File for Rowan Road (C.R. 77) (Section 820.1):

P.M. Peak	455	385	N/A	N/A
	NB	SB	EB	WB

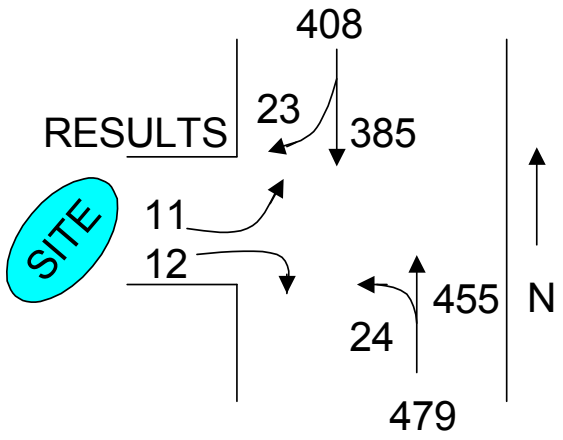
A.M. Peak Not Available

Total Daily Count: 23,624 (ADT) 10/4/01

From ITE Manual, P.M. Peak Hour Trips = (0.541 X 94 units) + 18.744 = 70 trips

A.M. Peak Hour Trips: N/A

From ITE, 67 percent (47) entering and 33 percent (23) exiting. Say 50/50 directional distribution.



Proceed to Warrants and Turn Lane Design Criteria.

Right Turn Warrants

From Table 1, Condition 1, see Graph 1B to check warrants for the southbound, right turn lane on Rowan Road.

$V_R = 23$, $V_A = 385 + 23 = 408$

From Graph 1B, a full width, right turn lane is not warranted.

Left Turn Warrants

From Table 2, Condition 1, see Graph 2D to check warrants for the northbound, left turn lane on Rowan Road.

$V_L = 24$, $V_A = 455 + 24 = 479$, $V_O = 385 + 23 = 408$

From Graph 2D, the intersection of V_O and V_L is to the right of the curve; therefore, a left turn lane is required.

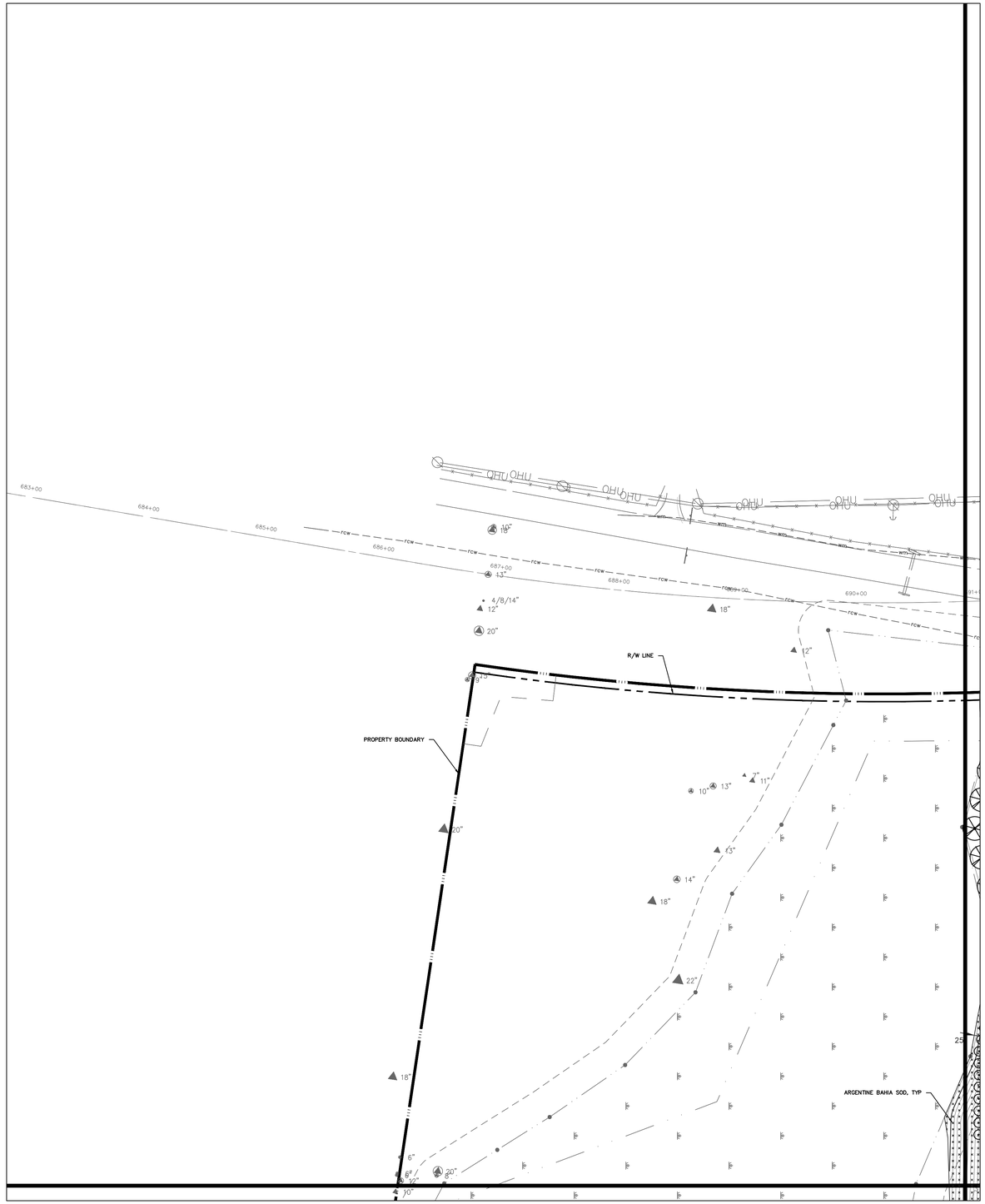
Left Turn Lane Lengths

From Table 4, Condition 1, the required deceleration length is determined by FDOT Index No. 301. A total deceleration distance (L) of 185 feet is required for the forty-five (45) mph urban condition and includes the fifty (50) foot taper length.

The required storage length (queue) is calculated as follows:

Storage Length = 25 X V_L/30 = 25 X 24/30 = 20 feet

Per Note 1, the required minimum storage length is fifty (50) feet. This is in addition to the 185-foot deceleration, for a total deceleration and storage length of 235 feet.



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(IN FEET)
1 Inch = 50 Feet

LEGEND

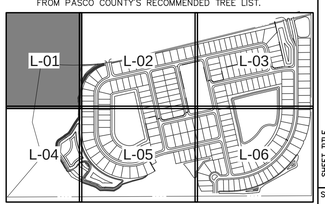
PLANTS TO BE INSTALLED

- SANDANKWA VIBURNUM
- WAX MYRTLE
- SABAL PALM
- CRAPE MYRTLE
- LONGLEAF PINE
- BALD CYPRESS
- SOUTHERN RED CEDAR
- AMERICAN SYCAMORE
- SOUTHERN MAGNOLIA
- LIVE OAK
- RED MAPLE
- DWF FAKAHATCHEE GRASS
- SAW PALMETTO
- ARGENTINE BAHIA SOD

LOT PLANTS
TO BE INSTALLED AT TIME
OF HOME CONSTRUCTION

- SABAL PALM
- CRAPE MYRTLE
- AMERICAN SYCAMORE
- SOUTHERN MAGNOLIA
- LIVE OAK
- RED MAPLE

NOTE: SUBSTITUTIONS FOR LOT TREES MAY BE SELECTED FROM PASCO COUNTY'S RECOMMENDED TREE LIST.



NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY:	JMG	CHECKED BY:	JSG
DRAWN BY:	JGE	SCALE:	1" = 50'

PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
FORM VISION REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
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PREPARED FOR:
CWES XXI, LLC

SEAL
JAMES S. GILMAN R.L.A.
License Number 0001628

SHEET TITLE
LANDSCAPE PLAN

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
L-01

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W S N E

50 0 50
(IN FEET)
1 Inch = 50 Feet

LEGEND

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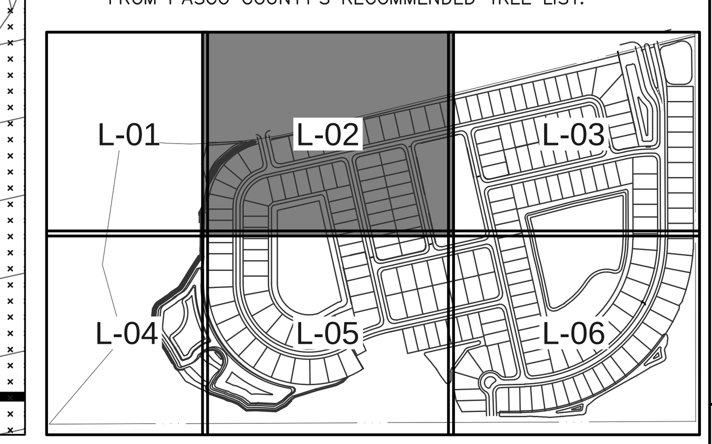
- SOUTHERN MAGNOLIA
- LIVE OAK
- RED MAPLE
- DWF FAKAHATCHEE GRASS
- SAW PALMETTO
- ARGENTINE BAHIA SOD

LOT PLANTS
TO BE INSTALLED AT TIME OF HOME CONSTRUCTION

- SABAL PALM
- CRAPE MYRTLE
- AMERICAN SYCAMORE
- SOUTHERN MAGNOLIA
- LIVE OAK
- RED MAPLE

NOTE: SUBSTITUTIONS FOR LOT TREES MAY BE SELECTED FROM PASCO COUNTY'S RECOMMENDED TREE LIST.



NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: JMG
CHECKED BY: JSG
PROJECT NUMBER 6216-005
DRAWN BY: JGE
SCALE: 1" = 50'
PLAN DATE AUG 2015

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PREPARED FOR
CWES XXI, LLC

SEAL
JAMES S. GILMAN R.L.A.
License Number 0001628

SHEET TITLE
LANDSCAPE PLAN

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
L-02

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MATCHLINE SEE SHEET L-02

PROPERTY BOUNDARY

R/W LINE (TYP)
FUTURE, TYP

TYPE D BUFFER

EXISTING RIGHT OF WAY

88 – SAW PALMETTO
135 – DWF FAKAHATCHEE GRASS

16 – SOUTHERN RED CEDAR
ARGENTINE BAHIA SOD, TYP
29 – LONGLEAF PINE
144 – SAW PALMETTO

9 – AMERICAN SYCAMORE

PHASE II

PHASE I

5'x5' ADA PASSING SPACE

10 – CRAPE MYRTLE
ARGENTINE BAHIA SOD, TYP
18 – SABAL PALM

POND–220

POND–210

POND–110

19 – LIVE OAK
ARGENTINE BAHIA SOD, TYP
19 – SOUTHERN MAGNOLIA
12 – RED MAPLE
316 – SANDANKWA VIBURNUM

TYPE A BUFFER

MATCHLINE SEE SHEET L-06

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W
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(IN FEET)
1 Inch = 50 Feet

LEGEND

PLANTS TO BE INSTALLED

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- RED MAPLE
- DWF FAKAHATCHEE GRASS
- SAW PALMETTO
- ARGENTINE BAHIA SOD

LOT PLANTS TO BE INSTALLED AT TIME OF HOME CONSTRUCTION

- SABAL PALM
- CRAPE MYRTLE
- AMERICAN SYCAMORE
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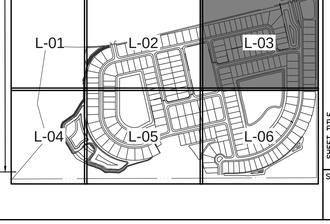
- LIVE OAK
- RED MAPLE

NOTE: SUBSTITUTIONS FOR LOT TREES MAY BE SELECTED FROM PASCO COUNTY'S RECOMMENDED TREE LIST.



NO.	DATE	DESCRIPTION

REVISIONS

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DRAWN BY:	JGE	SCALE:	1" = 50'

PROJECT NUMBER 6216-005
PLAN DATE AUG 2015

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PREPARED FOR
CWES XXI, LLC

SEAL
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License Number 0001628

SHEET TITLE
LANDSCAPE PLAN

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
L-03

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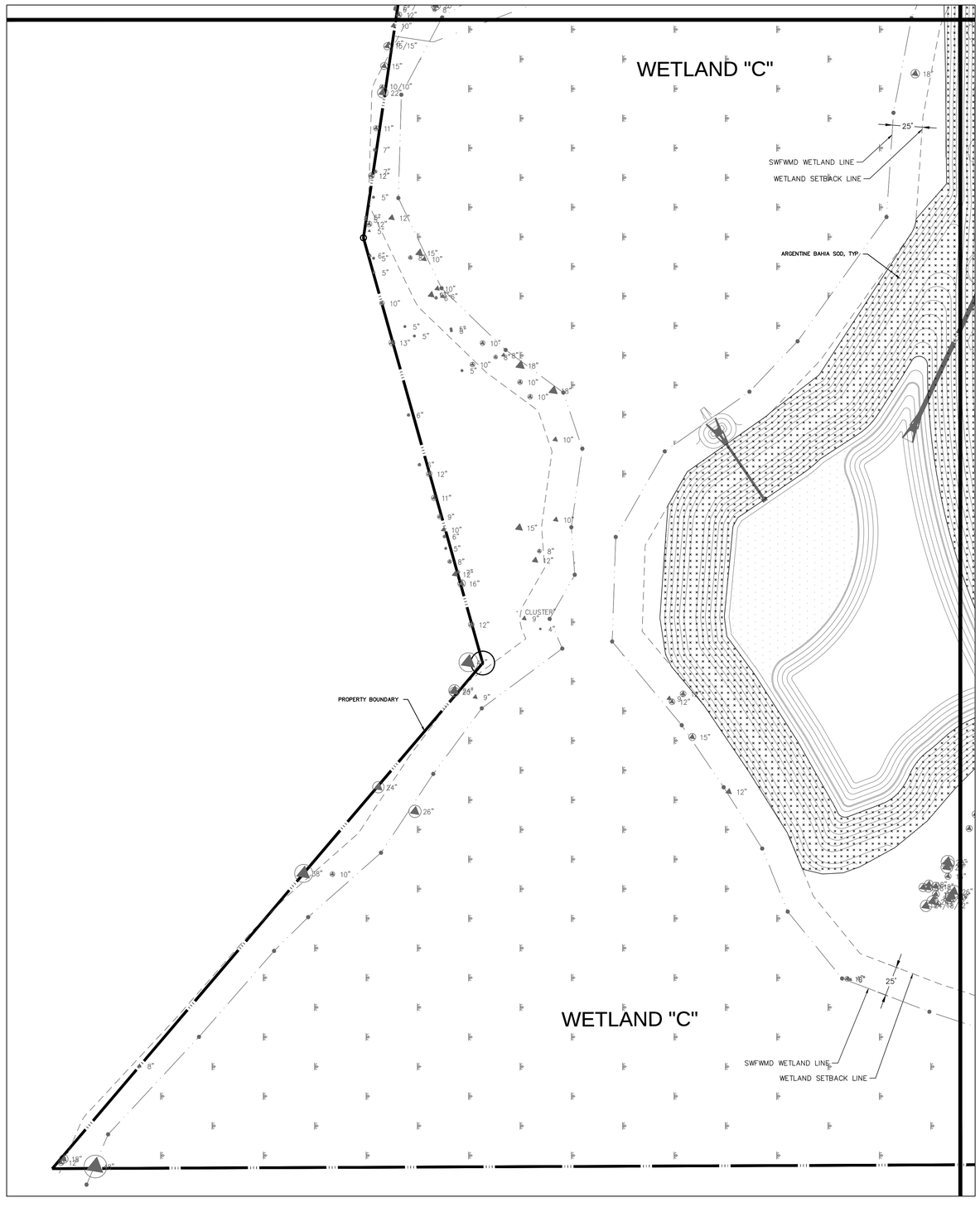

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1 Inch = 50 Feet

LEGEND

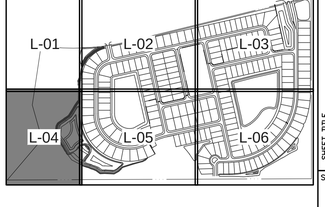
PLANTS TO BE INSTALLED

- SANDANKWA VIBURNUM
- WAX MYRTLE
- SABAL PALM
- CRAPE MYRTLE
- LONGLEAF PINE
- BALD CYPRESS
- SOUTHERN RED CEDAR
- AMERICAN SYCAMORE
- SOUTHERN MAGNOLIA
- LIVE OAK
- RED MAPLE
- DWF FAKAHATCHEE GRASS
- SAW PALMETTO
- ARGENTINE BAHIA SOD

LOT PLANTS
TO BE INSTALLED AT TIME OF HOME CONSTRUCTION

- SABAL PALM
- CRAPE MYRTLE
- AMERICAN SYCAMORE
- SOUTHERN MAGNOLIA
- LIVE OAK
- RED MAPLE

NOTE: SUBSTITUTIONS FOR LOT TREES MAY BE SELECTED FROM PASCO COUNTY'S RECOMMENDED TREE LIST.



NO.	DATE	DESCRIPTION	REVISIONS

DESIGNED BY: JMG
DRAWN BY: JGE
CHECKED BY: JSG
SCALE: 1" = 50'
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

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PREPARED FOR
CWES XXI, LLC

SEAL
JAMES S. GILMAN R.L.A.
License Number 0001628

SHEET TITLE
LANDSCAPE PLAN

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
L-04

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MATCHLINE SEE SHEET L-02

MATCHLINE SEE SHEET L-04

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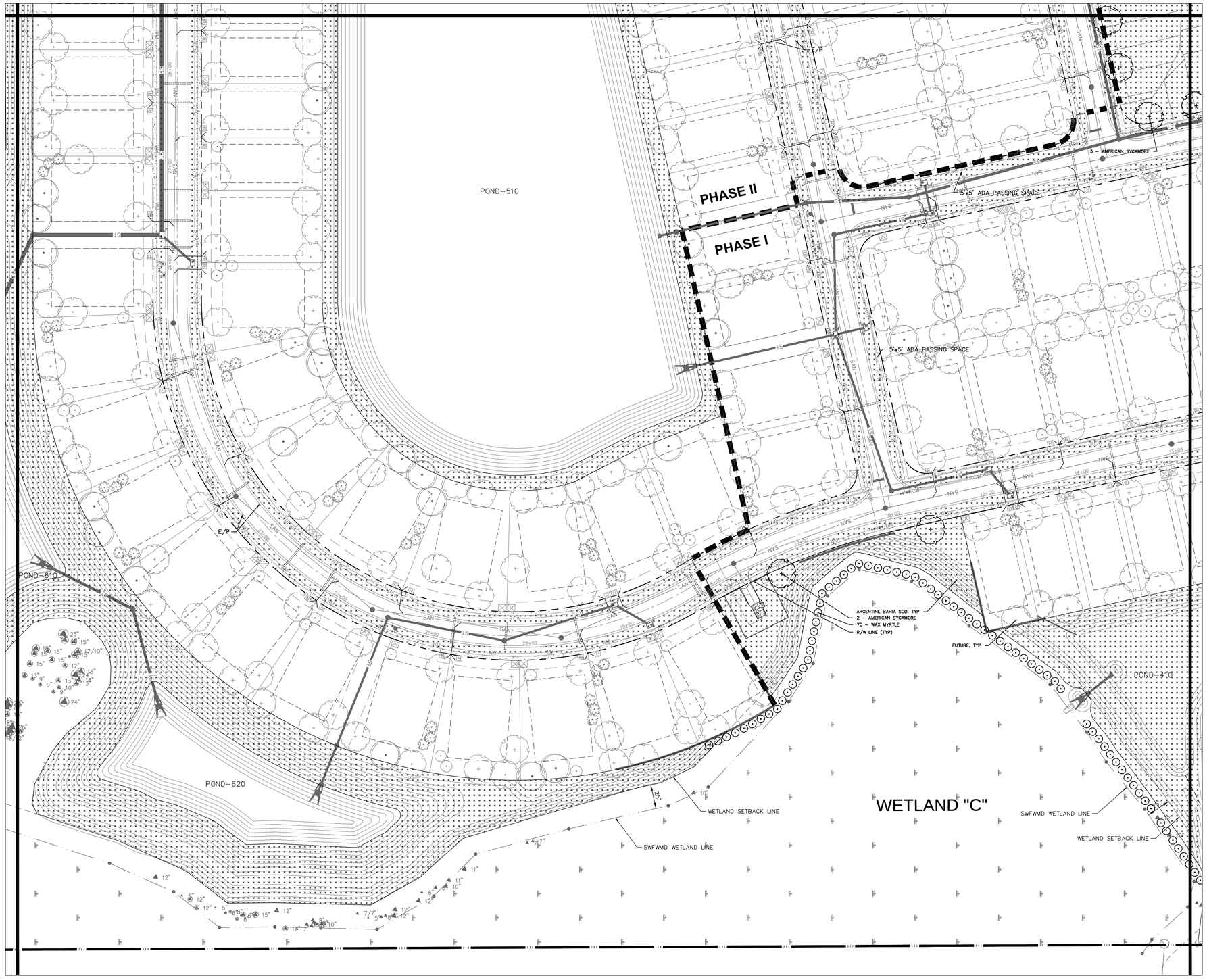

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TO BE INSTALLED AT TIME OF HOME CONSTRUCTION

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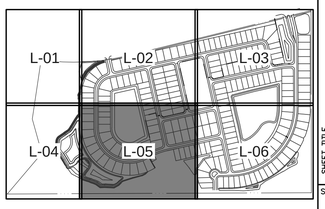

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DRAWN BY:	JGE	SCALE:	1" = 50'

PROJECT NUMBER 6216-005

PLAN DATE AUG 2015

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PREPARED FOR:

CWES XXI, LLC

SEAL

JAMES S. GILMAN R.L.A.
License Number 0001628

SHEET TITLE

LANDSCAPE PLAN

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

L-05

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MATCHLINE SEE SHEET L-05

POND-110

5 – AMERICAN SYCAMORE

FUTURE TYP
R/W LINE (TYP)

5'x5' ADA PASSING SPACE

5'x5' ADA PASSING SPACE

3 – WAX MYRTLE

POND-400

POND-310B

POND-310A

E/P

SWFWMD WETLAND LINE
WETLAND SETBACK LINE

WETLAND "B"

TYPE A BUFFER

3 – LIVE OAK
ARGENTINE BAHIA SOD, TYP
85 – SANDANKWA VIBURNUM

6 – SOUTHERN MAGNOLIA
3 – RED MAPLE
78 – WAX MYRTLE
PROPERTY BOUNDARY

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LOT PLANTS
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NOTE: SUBSTITUTIONS FOR LOT TREES MAY BE SELECTED FROM PASCO COUNTY'S RECOMMENDED TREE LIST.

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY:	JMG	PROJECT NUMBER	6216-005
DRAWN BY:	JGE	CHECKED BY:	JSG
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PREPARED FOR:

CWES XXI, LLC

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JAMES S. GILMAN R.L.A.
License Number 0001628

SHEET TITLE

LANDSCAPE PLAN

PROJECT NAME

GRANTHAM RANCH EAST

SHEET NUMBER

L-06

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GENERAL LANDSCAPE NOTES

1. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT SITE CONDITIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE REQUIRED QUANTITIES OF ALL MATERIALS. QUANTITIES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. IF ANY DISCREPANCIES OCCUR BETWEEN QUANTITIES CALLED FOR ON THE PLANT LIST AND THOSE INDICATED ON THE DRAWINGS, THE PLANS SHALL GOVERN.

2. PRIOR TO COMMENCEMENT OF CONSTRUCTION, CONTRACTOR SHALL INSPECT PLANTING AREAS AND VERIFY THAT NO OBJECTIONABLE MATERIALS OR OBSTRUCTIONS ARE PRESENT. PRESENT FINDINGS TO OWNER AND/OR OWNER'S REPRESENTATIVE FOR APPROVAL.

3. PRIOR TO COMMENCEMENT OF CONSTRUCTION, CONTRACTOR SHALL CONDUCT SOILS ANALYSIS. A MINIMUM OF 12 SOIL SAMPLES SHALL BE TAKEN THROUGHOUT PROPOSED PLANTING AREAS. SAMPLES SHALL BE COLLECTED PER INSTRUCTIONS FROM THE APPROVED AGRONOMIC SOILS TESTING LABORATORY. SAMPLES AND PROPOSED PLANT MATERIAL FOR THAT LOCATION SHALL BE SUBMITTED TO THE LABORATORY, SAMPLES SHALL BE ANALYZED FOR, AT A MINIMUM, SOIL TEXTURE, PERCENTAGE OF ORGANIC MATTER, PH LEVELS, TOTAL SOLUBLE SALTS AND ESTIMATED SOIL INFILTRATION RATE. SUBMIT ANALYSIS RESULTS AND ANY RECOMMENDATIONS FOR AMENDMENTS TO THE OWNER'S REPRESENTATIVE FOR REVIEW.

4. THE LANDSCAPE CONTRACTOR SHALL COORDINATE CONSTRUCTION OF PLANTING AREAS WITH HARDSCAPE WORK.

5. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY HOISTING EQUIPMENT NECESSARY FOR THE PLACEMENT OF PLANT MATERIAL.

6. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING APPLICABLE PERMITS BEFORE COMMENCING CONSTRUCTION.

7. PRE–INSTALLATION INSPECTION: ALL PLANTINGS MUST BE INSPECTED PRIOR TO INSTALLATION TO DETERMINE PROPER ROOTBALL SIZE/QUALITY AND COMPLIANCE WITH ALL MINIMUM STANDARDS. NOTIFY THE OWNER'S REPRESENTATIVE 48 HOURS PRIOR TO DELIVERY. FAILURE TO COMPLY WILL REQUIRE THE CONTRACTOR TO EXCAVATE ALL PLANTS INSTALLED PRIOR TO INSPECTION. TREES THAT DO NOT MEET THE MINIMUM ROOTBALL SIZE REQUIREMENTS WILL BE REJECTED. THE TOP FLAIR ROOTS SHALL BE VISIBLE ON ALL CONTAINER GROWN TREES. TREES POTTED TOO DEEPLY WILL BE REJECTED.

8. PLANTS SHALL CONFORM TO THE VARIETIES INDICATED IN THE PLANT LIST. SUBSTITUTION OF PLANT MATERIALS WILL NOT BE PERMITTED UNLESS AUTHORIZED BY THE OWNER'S REPRESENTATIVE; ALL SUBSTITUTIONS MUST MEET MINIMUM SPECIFICATIONS ON THE PLANT LIST.

9. PLANT MATERIAL LOCATIONS AND BED OUTLINES SHALL BE STAKED OR FLAGGED ON SITE BY THE LANDSCAPE CONTRACTOR, AND SHALL BE ADJUSTED IF REQUIRED TO FIT ACTUAL AS–BUILT CONDITIONS ON SITE AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. NOTIFY THE OWNER'S REPRESENTATIVE A MINIMUM OF 3 BUSINESS DAYS PRIOR TO INSPECTION.

10. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING THE CONDITION OF UNDERGROUND UTILITIES THAT EFFECT PLANTING PROCEDURES. IF ANY CONFLICTS OCCUR BETWEEN PROPOSED LOCATION OF TREES ON THE DRAWINGS AND ANY UNDERGROUND UTILITIES OR SUBSURFACE OR OVERHEAD UTILITIES OR STRUCTURES, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE. IF THE LANDSCAPE CONTRACTOR DAMAGES ANY STAKED OR IN PLACE UTILITIES OR STRUCTURES BY HIS OWN NEGLIGENCE THEY SHALL BE REPAIRED AT THE LANDSCAPE CONTRACTOR'S DEFENSE.

11. WORK WITHIN 15' OF TREES TO REMAIN SHALL BE PERFORMED BY HAND. ANY DISTURBED ROOTS SHALL BE SEVERED USING CLEAN, SHARP TOOLS.

12. FERTILIZER FOR INITIAL INSTALLATION OF TREES AND SHRUBS SHALL BE CONTROLLED RELEASE FERTILIZER WITH A 15–9–12 ANALYSIS AND CONTAINING TRACE ELEMENTS Mg, S, B, Cu, Fe, Mn, Mo, AND Zn. FERTILIZER GRANULES SHALL BE COMPOSED OF DRY NUTRIENTS ENCAPSULATED IN MULTIPLE LAYERS OF POLYMERIC RESIN.

    FOR INITIAL INSTALLATION OF PALMS, FERTILIZER SHALL BE 100% CONTROLLED RELEASE FERTILIZER WITH A 8–2–12 (8N–$2P_2O_5$–$12K_2O$+4MG) ANALYSIS, AND CONTAINING TRACE ELEMENTS S, B, Cu, Fe, Mn AND Zn. FERTILIZER GRANULES SHALL BE COMPOSED OF DRY NUTRIENTS ENCAPSULATED IN MULTIPLE LAYERS OF POLYMERIC RESIN. INCORPORATE FERTILIZER INTO PLANTING SOILS AND BACKFILL.

    FOR INITIAL INSTALLATION OF SOD, FERTILIZER SHALL BE CONTROLLED RELEASE FERTILIZER WITH A 16–4–8 ANALYSIS.

    SOURCE FOR N SHALL BE RESIN–COATED UREA OR RESIN COATED AMMONIUM SALTS.

    Mn, Zn, AND Cu SHALL BE SULFATE FORMS. Fe SHALL BE GRANULAR CHELATED IRON.

    APPLICATION RATES:

3.0 OZ PER EA 3 GALLON CONTAINER	6.0 OZ PER EA 7 GALLON CONTAINER
9.0 OZ PER EA 15 GALLON CONTAINER	14.0 OZ PER EA 25 GALLON CONTAINER
20.0 OZ PER EA 30 GALLON CONTAINER	30.0 OZ PER EA 45 GALLON CONTAINER
44.5 OZ PER EA PALM	FOR GRASSING AND SOD AREAS: APPLY 6#/1000SF.

13. TREES, PALMS, SHRUBS, AND SOD SHALL BE HAND WATERED BY LANDSCAPE CONTRACTOR AND AS DETERMINED BY THE OWNER'S REPRESENTATIVE. TEMPORARY IRRIGATION SYSTEM MAY BE USED IF APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE. WATERING RATES SHALL BE AS FOLLOWS. WATERING RATE MAY BE ADJUSTED BY THE CONTRACTOR TO MAINTAIN OPTIMAL GROWING CONDITIONS WITH WRITTEN APPROVAL FROM THE OWNER AND/OR OWNER'S REPRESENTATIVE

    WATERING RECOMMENDATIONS:

SIZE OF NURSERY STOCK:	IRRIGATION FOR GROWTH AND VIGOR
3 GAL SHRUB	DAILY FOR 2 WEEKS; EVERY OTHER DAY FOR 2 MONTHS; WEEKLY UNTIL ESTABLISHED
7 GAL SHRUB	DAILY FOR 2 WEEKS; EVERY OTHER DAY FOR 2 MONTHS; WEEKLY UNTIL ESTABLISHED
15/25/30 GAL TREE	DAILY FOR 2 WEEKS; EVERY OTHER DAY FOR 2 MONTHS; WEEKLY UNTIL ESTABLISHED
45 GAL TREE	DAILY FOR 1 MONTH; EVERY OTHER DAY FOR 3 MONTHS; WEEKLY UNTIL ESTABLISHED
PALM	DAILY FOR 1 MONTH; EVERY OTHER DAY FOR 3 MONTHS; WEEKLY UNTIL ESTABLISHED
SOD	DAILY FOR 1 WEEK; EVERY OTHER DAY FOR 2 WEEKS; 2X PER WEEK FOR 2 WEEKS

    A. TREES: AT EACH IRRIGATION APPLY 10 GALLONS PER INCH OF TRUNK CALIPER TO THE ROOTBALL. APPLY IN A MANNER THAT WILL ALLOW ALL WATER TO SOAK INTO THE ROOTBALL. DO NOT WATER IF ROOTBALL IS WET OR SATURATED ON THE IRRIGATION DAY.
    B. PALMS: APPLY 30 GALLONS PER PALM PER APPLICATION TO THE ROOTBALL. APPLY IN A MANNER THAT WILL ALLOW ALL WATER TO SOAK INTO THE ROOTBALL. DO NOT WATER IF ROOTBALL IS WET OR SATURATED ON THE IRRIGATION DAY.
    C. SHRUBS AND GROUNDCOVERS: AT EACH IRRIGATION APPLY WATER TO WET THE ENTIRE DEPTH OF ROOTBALL. DO NOT WATER IF ROOTBALL IS WET OR SATURATED ON THE IRRIGATION DAY.
    D. SOD: SOAK THOROUGHLY TO 3" BELOW DEPTH OF ROOT ZONE. DO NOT WATER IF ROOT ZONE IS WET OR SATURATED ON IRRIGATION DAY.

14. PLANTS SHALL BE SOUND, HEALTHY AND VIGOROUS, WELL–BRANCHED AND DENSELY FOLIATED WHEN IN LEAF. THEY SHALL BE FREE OF DISEASE, INSECTS, EGGS OR LARVAE, AND SHALL HAVE HEALTHY, WELL DEVELOPED ROOT SYSTEMS. THEY SHALL BE FREE FROM PHYSICAL DAMAGE OR ADVERSE CONDITIONS THAT WOULD PREVENT THRIVING CONDITIONS.

15. ALL PLANT MATERIAL SHALL BE FLORIDA GRADE NO. 1 OR BETTER AS SPECIFIED IN GRADES AND STANDARDS FOR NURSERY PLANTS PARTS I AND II, DIVISION OF PLANT INDUSTRY, FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, LATEST EDITION, AND SHALL CONFORM TO CURRENT AMERICAN ASSOCIATION OF NURSERYMAN STANDARDS FOR NURSERY STOCK.

16. TREE INSTALLATION: ALL REQUIRED TREES SHALL BE INSTALLED 1"–2" ABOVE FINISHED GRADE. TREES INSTALLED OR BURIED TOO DEEPLY SHALL BE RESET TO THIS STANDARD. REMOVE THE TOP 1/3 OF THE WIRE BASKET ON ALL B&B TREE STOCK.

17. FOR MEDIAN AT ENTRY, AND CULD–DE–SAC, EXCAVATE AND REMOVE EXISTING MATERIAL TO A DEPTH OF 6" OR TO THE BOTTOM OF PAVING BASE MATERIAL. COORDINATE WITH SITE CONTRACTOR TO ENSURE COMPLETE REMOVAL OF ALL PAVING BASE MATERIAL PRIOR TO BACKFILLING. PLACE PLANTING BACKFILL MIXTURE (MINIMUM 6" DEPTH OR AS NEEDED TO MEET FINAL GRADE) IN ALL LANDSCAPE BEDS AND ROTOTILL THOROUGHLY WITH EXISTING SOIL TO A MINIMUM DEPTH OF 12". RE–ESTABLISH FINISH GRADE 3" BELOW EDGE OF CURB. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE TO INSPECT GRADES A MINIMUM OF 3 BUSINESS DAYS PRIOR TO INSPECTION. NO PLANTING SHALL OCCUR UNTIL INSPECTION OF GRADES IS COMPLETED.

18. PLANTING BACKFILL MIXTURE FOR TREES, SHRUBS, AND GROUNDCOVERS SHALL CONSIST OF EQUAL PARTS COARSE SAND AND "BLENDED SOIL", SUBJECT TO OWNER AND/OR OWNER'S REPRESENTATIVE APPROVAL. PLANTING BACKFILL FOR PALMS SHALL BE COARSE SAND (DO NOT USE "BLENDED SOIL"). MIX THOROUGHLY WITH EXISTING SOIL ACCORDING TO THE FOLLOWING SCHEDULE:

    3 GALLON: 1 CF COARSE SAND AND 1 CF "BLENDED SOIL"
    7 GALLON: 1.5 CF COARSE SAND AND 1.5 CF "BLENDED SOIL"
    15 GALLON: 2 CF COARSE SAND AND 2 CF "BLENDED SOIL"
    25/30 GALLON: 3.5 CF COARSE SAND AND 3.5 CF "BLENDED SOIL"
    45 GALLON: 5 CF COARSE SAND AND 5 CF "BLENDED SOIL"
    PALMS: 10 CF COARSE SAND (DO NOT ADD "BLENDED SOIL")

    REFER TO DETAILS FOR MINIMUM PLANTING PIT DIMENSIONS. SEE NOTE 22 BELOW FOR "BLENDED SOIL" COMPOSITION.

19. "BLENDED SOIL" SHALL CONSIST OF: 1/3 MUSHROOM COMPOST OR PEAT, 1/3 COMMERCIALLY PROCESSED AND COMPOSTED COW MANURE AND 1/3 COMPOSTED BARK.

20. BACKFILL AROUND PLANT MATERIAL SHALL BE WORKED AND WATERED AROUND THE ROOTBALL TO FILL VOIDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING PLANT MATERIAL IS PROPERLY WATERED DAILY AFTER INSTALLATION UNLESS OTHERWISE INSTRUCTED BY OWNER AND/OR OWNER'S REPRESENTATIVE.

21. AFTER PLANT MATERIAL HAS BEEN INSTALLED AND APPROVED, PLANTING BEDS SHALL BE RAKED TO AN EVEN GRADE TO CONFORM TO PRE–MULCHING FINISH GRADES 3" BELOW TOP OF ADJACENT CURB. PLANTING BEDS AND PLANT SAUCERS SHALL THEN BE UNIFORMLY COVERED WITH A MINIMUM OF 3 INCH LAYER (MEASURED AS WETTED DEPTH) OF PINE BARK NUGGETS. MULCH SHALL NOT BE PLACED DIRECTLY AGAINST TRUNKS OR STEMS. MULCH SHALL BE FLUSH WITH ADJACENT TOP OF HARDSCAPE.

22. LANDSCAPE CONTRACTOR SHALL BEAR FINAL RESPONSIBILITY FOR PROPER SURFACE DRAINAGE OF PLANTED AREAS. ANY DISCREPANCY IN THE DRAWINGS, OBSTRUCTION ON THE SITE, OR PRIOR WORK DONE BY ANOTHER PARTY WHICH THE LANDSCAPE CONTRACTOR FEELS PRECLUDES ESTABLISHING PROPER DRAINAGE SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF OWNER AND/OR OWNER'S REPRESENTATIVE.

23. SOD ALL AREAS SHOWN ON PLANS USING ARGENTINE BAHIA SOD. SEE CIVIL PLANS, SHEET C–02 NOTE 16, FOR SEEDING AND MULCHING OF OTHER DISTURBED AREAS. SOD AREAS SHALL BE GRADED TO FINAL PRE–SODDING GRADE AND RAKED SMOOTH. ALL ROCKS, DEBRIS, TRASH, ROOTS, ETC. SHALL BE REMOVED. SOD SHALL BE OF TYPES SPECIFIED ON PLANS. SOD SHALL BE CUT IN 12"X24" RECTANGLES, DELIVERED AND INSTALLED WITHIN 72 HOURS OF HARVESTING. SOD SHALL BE LAID END TO END WITH JOINTS BUTTED TIGHT. STAGGER SOD PIECES TO PREVENT 4 CORNER INTERSECTIONS. PEG SOD LAID ON SLOPES GREATER THAN 6:1 OR AS NEEDED TO PREVENT SLIDING. THOROUGHLY WATER IMMEDIATELY AFTER INSTALLATION.

24. LANDSCAPE CONTRACTOR RESPONSIBLE FOR REPAIRING SODDED AREAS DISTURBED BY OTHER CONTRACTORS OR BY INSTALLATION OF THE LANDSCAPE.

25. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR RE–STAKING OF TREES AND PALMS DURING THE GUARANTEE PERIOD. MAXIMUM TOLERANCE FROM VERTICAL SHALL BE 3 DEGREES.

26. THE LANDSCAPE CONTRACTOR SHALL FULLY MAINTAIN ALL PLANT MATERIAL ON SITE DURING AND BEFORE PLANTING, UNTIL THE WORK IS ACCEPTED BY THE OWNER'S REPRESENTATIVE. MAINTENANCE WILL BE PROVIDED FOR A MINIMUM OF ONE YEAR BY THE CONTRACTOR FROM FINAL INSPECTION AND ACCEPTANCE.

27. ALL TREES, PALMS AND PLANT MATERIAL (INCLUDING TREES TO REMAIN) SHALL BE GUARANTEED BY THE LANDSCAPE CONTRACTOR TO BE HEALTHY PLANTS AND IN FLOURISHING CONDITION OF ACTIVE GROWTH FOR ONE (1) YEAR FROM THE DATE OF FINAL INSPECTION AND ACCEPTANCE.

28. CONTRACTOR SHALL PROTECT EXISTING TREES TO REMAIN THROUGHOUT DEMOLITION AND CONSTRUCTION. DAMAGED PLANT MATERIAL DESIGNATED TO REMAIN SHALL BE REPLACED WITH PLANTS OF SAME SPECIES MIN (6' HT, 2" CAL) AND SHALL BE SUBJECT TO ALL REQUIREMENTS HEREIN.

29. IN GENERAL, THE WORK SHALL PROCEED AS RAPIDLY AS THE SITE BECOMES AVAILABLE.

30. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DAILY CLEANUP OF PREMISES AND REMOVAL OF DISCARDED AND SURPLUS MATERIALS AND RUBBISH. ANY OPEN PITS OR TRENCHES SHALL BE COMPLETELY AND THOROUGHLY BARRICADED. OPEN PITS OR TRENCHES SHALL BE COMPLETELY FILLED IN AT THE END OF EACH WORKDAY. NO OPEN PITS OR TRENCHES ARE TO REMAIN OPEN AFTER WORK IS COMPLETE FOR THAT DAY.

31. CONTRACTOR SHALL SUBMIT PRODUCT SAMPLES AND SHOP DRAWINGS FOR ALL PROPOSED MATERIALS INCLUDING PLANTS, SOIL AMENDMENTS, FERTILIZER, MULCH, ETC. PRIOR TO PURCHASING, CONTRACTOR SHALL PROVIDE REPRESENTATIVE SAMPLES OF ALL PLANT MATERIAL ON–SITE FOR REVIEW BY OWNER'S REPRESENTATIVE; NOTIFY OWNER'S REPRESENTATIVE OF INSPECTION A MINIMUM OF 5 BUSINESS DAYS PRIOR TO INSPECTION. IF APPROVED BY OWNER AND/OR OWNER'S REPRESENTATIVE, THEN DATED, SCALED PHOTOGRAPHS MAY ALSO BE SUBMITTED.

PLANT LIST

SCIENTIFIC NAME	COMMON NAME	UNIT	QUANITY	MINIMUM SPECIFICATIONS
TREES/PALMS				
ACER RUBRUM 'FLORIDA FLAME'	RED MAPLE	EA	15	30 GAL, 10' HT x 4' SPD, 2" CAL
JUNIPERUS VIRGINIANA SILICICOLA	SOUTHERN RED CEDAR	EA	26	25 GAL, 6'–8' HT, FULL TO GROUND, 2" CAL
LAGERSTROEMIA INDICA	CRAPE MYRTLE	EA	10	30 GAL, 8'–10' HT x 5' SPD, MULTI TRUINK, 3 TRUNKS MIN, 3" CAL
MAGNOLIA GRANDIFLORA 'DD BLANCHARD'	SOUTHERN MAGNOLIA	EA	25	30 GAL, 8' HT x 3' SPD, 2" CAL
PINUS PALUSTRIS	LONGLEAF PINE	EA	65	15 GAL, 6'–8' HT, 2" CAL
PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	EA	30	30 GAL, 11'–12 HT, 2" CAL
QUERCUS VIRGINIANA	LIVE OAK	EA	22	45 GAL, 12'–13' HT x 4'–5' SPD, 2" CAL
SABAL PALMETTO	SABAL PALM	EA	18	FG, SLICK, STRAIGHT, HEAVY TRUNK, 12'–20' CT
TAXODIUM DISTICHUM	BALD CYPRESS	EA	6	30 GAL, 8'–10' HT x 3'–4' SPD, 2" CAL
SHRUBS/GROUNDCOVERS				
MYRICA CERIFERA	WAX MYRTLE	EA	172	3 GAL, 20"–22 HT x 20"–22" SPD, FULL, 10' OC
SERENOA REPENS	SAW PALMETTO	EA	388	7 GAL, 20" HT x 20" SPD, FULL TO POT, 48" OC
TRIPSACUM FLORIDANUM	DWF FAKAHATCHEE GRASS	EA	310	3 GAL, 24" HT, FULL, 36" OC
VIBURNUM SUSPENSUM	SANDANKWA VIBURNUM	EA	411	3 GAL, 24" HT x 24" SPD, FULL DENSE FOLIAGE, 36" OC
TURF				
PASPALUM NOTATUM 'ARGENTINE'	ARGENTINE BAHIA SOD	SF	AS SHOWN ON PLANS	12" X 24" RECTANGLES, WEED AND WEED SEED FREE

NOTE: PLANT LIST QUANTITIES INCLUDE PLANTS TO BE INSTALLED. LOT PLANTS ARE NOT INCLUDED IN QUANTITIES AND PLANT LIST. LOT PLANTS ARE TO BE INSTALLED AT TIME OF HOME CONSTRUCTION.

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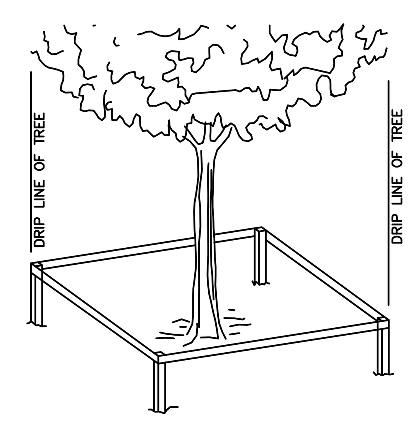
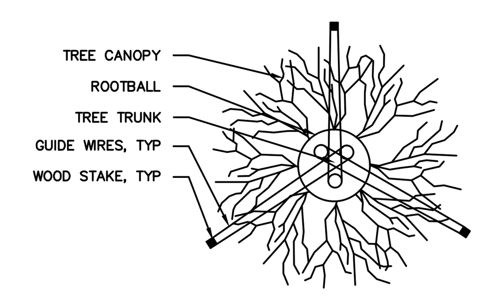
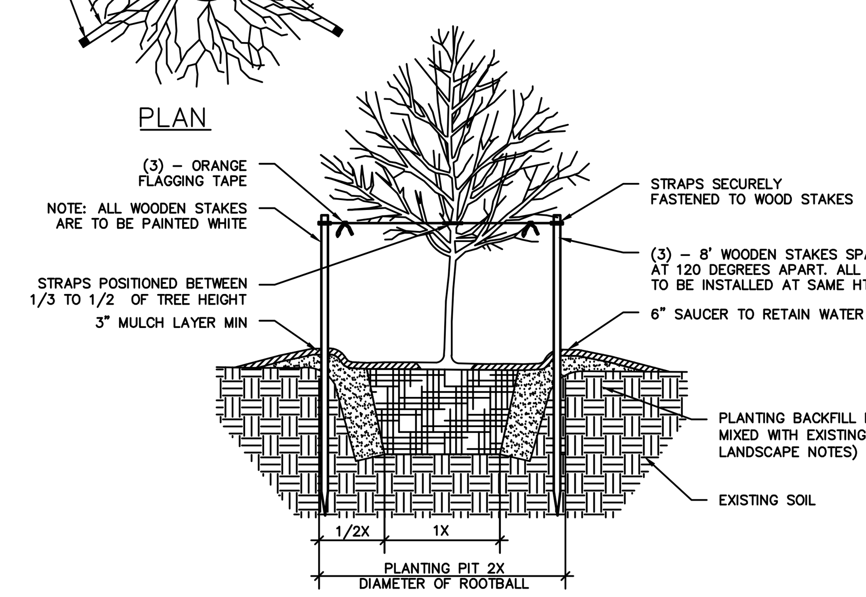


NOTES:
1. THE PROTECTED ZONE SHALL RADIALLY EXTEND FROM THE TREE TRUNK AT A MINIMUM DISTANCE EQUAL TO THE TREE'S DRIP LINE.
2. BARRIERS A MINIMUM THREE (3) FEET IN HEIGHT SHALL BE ERECTED OUTSIDE THE PROTECTED ZONE TO PREVENT ENCROACHMENT. BARRIERS SHALL REMAIN IN PLACE AND BE IN GOOD CONDITION THROUGHOUT ALL DEVELOPMENT AND BUILDING ACTIVITY. SILT BARRIERS, HAY BALES, OR SIMILARLY EFFECTIVE EROSION–CONTROL BARRIERS SHALL BE REQUIRED IN ANY AREAS WHERE EROSION OR SILTATION MAY CAUSE DAMAGE TO RETAINED TREES.
3. FOR AREAS CONTAINING STANDS OF TREES TO BE RETAINED THAT ARE SEPARATED FROM GRUBBING, CLEARING, AND CONSTRUCTION, IN LIEU OF PLACING BARRIERS AROUND EACH TREE, THE STAND OF TREES MAY BE PARTITIONED OFF BY PLACING THE BARRIERS AROUND THE PERIMETER OF THE STAND AREA ON THE SIDES WHERE GRUBBING, CLEARING, CONSTRUCTION, ETC. IS OCCURRING, AS LONG AS AN EQUIVALENT PROTECTED ZONE IS ESTABLISHED.

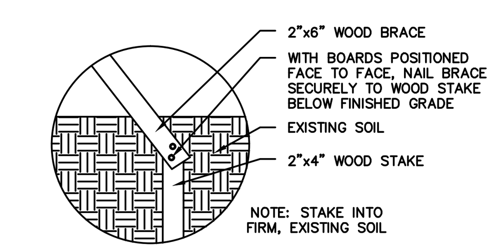
PLANTING DETAIL – TREE BARRICADE
NTS



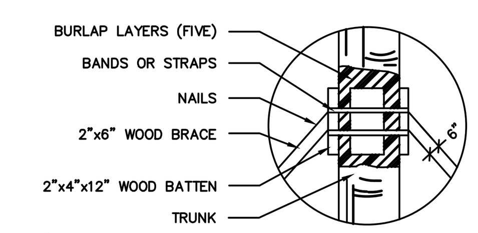
PLAN



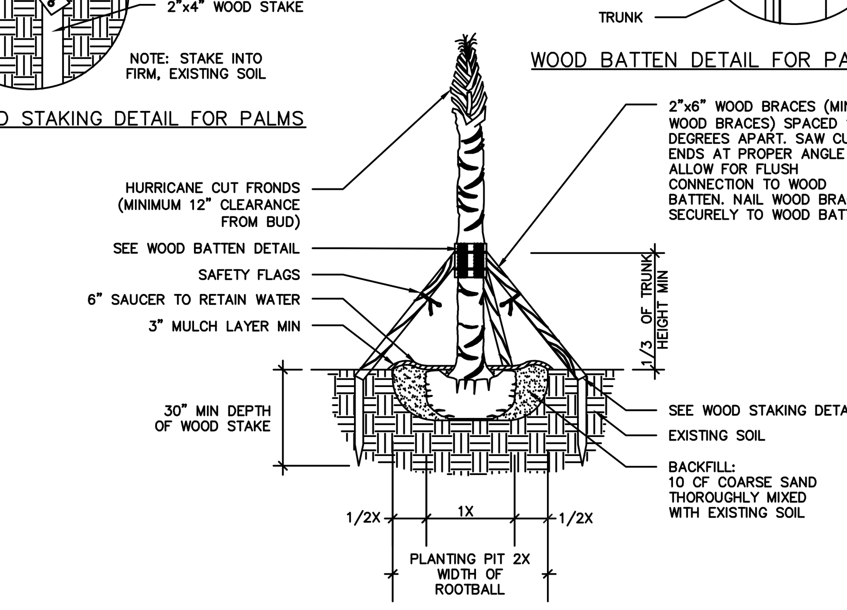
PLANTING DETAIL – TREE
NTS



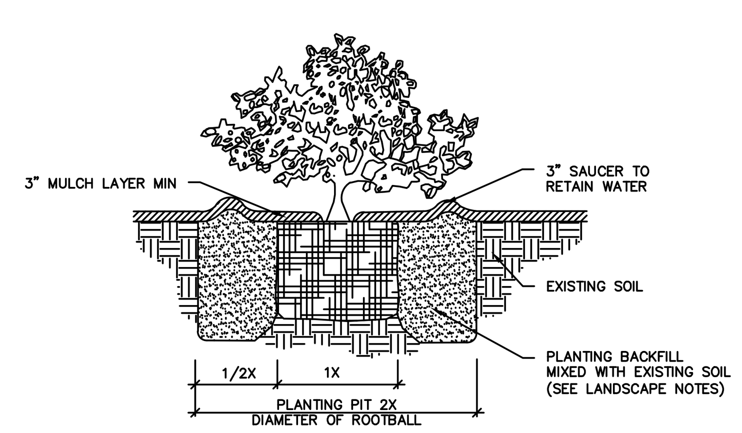
WOOD STAKING DETAIL FOR PALMS



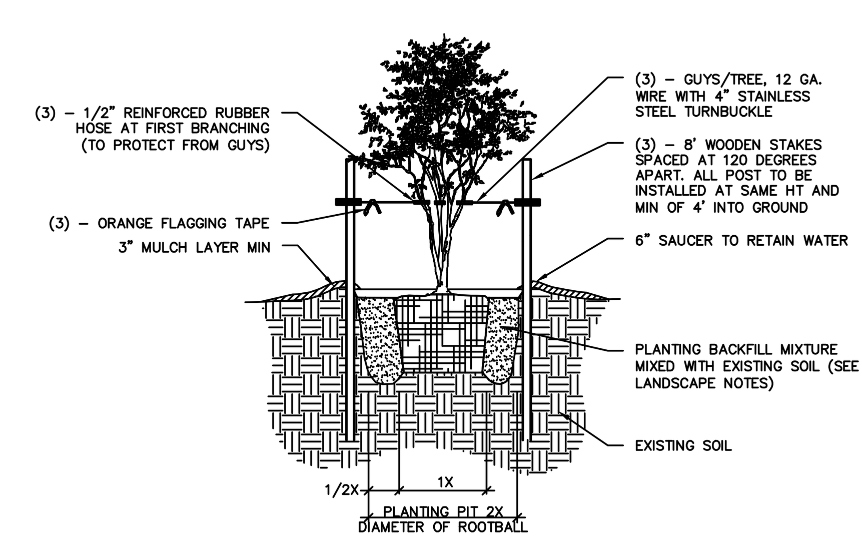
WOOD BATTEN DETAIL FOR PALMS



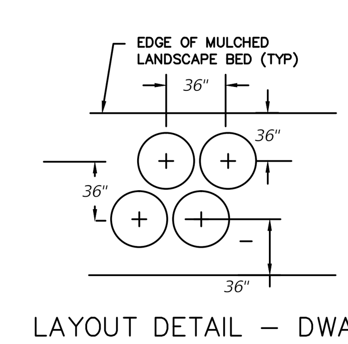
PLANTING DETAIL – SABAL PALM
NTS



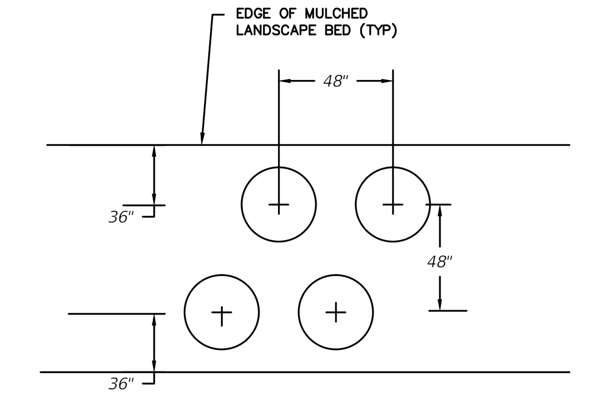
PLANTING DETAIL – TYPICAL SHRUB/GROUNDCOVER
NTS



PLANTING DETAIL – MULTI–STEM TREE
NTS



LAYOUT DETAIL – DWARF FAKAHATCHEE PLANTING
NTS



LAYOUT DETAIL – SAW PALMETTO PLANTING
NTS

REVISIONS
NO. DATE DESCRIPTION

DESIGNED BY: JMG
CHECKED BY: JSG
PROJECT NUMBER 6216-005
DRAWN BY: JGE
SCALE: AS NOTED
PLAN DATE AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 00009660 FL LB 0006816 FL LC 26000202

PREPARED FOR
CWES XXI, LLC

SEAL
JAMES S. GILMAN R.L.A.
License Number 0001628

SHEET TITLE
LANDSCAPE NOTES AND DETAILS

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
L-07

Printed: August 31, 2015 (3:02pm EST) by: jevitt
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TREE REMOVAL, REPLACEMENT & MITIGATION

EXISTING TREES ON SITE-TEN (10) INCHES & LARGER ONLY

Live Oaks				Other Trees		
Size (Inches)	No.	Total Inches		Size (Inches)	No.	Total Inches
10	12	120		10	16	160
11	0	0		11	5	55
12	15	180		12	15	180
13	9	117		13	5	65
14	2	28		14	2	28
15	15	225		15	7	105
16	0	0		16	3	48
18	20	360		18	5	90
20	4	80		20	0	0
22	1	22		22	1	22
24	6	144		24	2	48
25	2	50		25	0	0
26	5	130		26	0	0
27	2	54		27	0	0
28	3	84		28	0	0
30	2	60		30	0	0
32	1	32		32	0	0
33	1	33		33	0	0
34	1	34		34	0	0
36	3	108		36	0	0
38	1	38		38	0	0
40	2	80		40	0	0
42	3	126		42	0	0
44	1	44		44	0	0
48	3	144		48	0	0
52	2	104		52	0	0
54	2	108		54	0	0
etc.				etc.		
Total Oak:		**2505**		**Total Other:**		**801**

TREE INCHES TO BE REMOVED-10" DBA & Larger

Live Oaks				Other Trees		
Size (inches)	No.	Total Inches		Size (inches)	No.	Total Inches
10	3	30		10	4	40
11	0	0		11	2	22
12	5	60		12	5	60
13	2	26		13	3	39
14	1	14		14	1	14
15	6	90		15	5	75
16	0	0		16	3	48
18	10	180		18	2	36
20	2	40		20	0	0
22	0	0		22	0	0
24	1	24		24	1	24
25	0	0		25	0	0
26	2	52		26	0	0
27	1	27		27	0	0
28	2	56		28	0	0
30	2	60		30	0	0
32	1	32		32	0	0
33	1	33		33	0	0
34	1	34		34	0	0
36	3	108		36	0	0
38	0	0		38	0	0
40	2	80		40	0	0
42	3	126		42	0	0
44	1	44		44	0	0
48	2	96		48	0	0
52	2	104		52	0	0
54	1	54		54	0	0
etc.				etc.		
Total Oak:		**1370**		**Total Other:**		**358**

TOTAL TREE INCHES TO BE SAVED

Live Oaks				Other Trees		
Size (Inches)	No.	Total Inches		Size (Inches)	No.	Total Inches
10	9	90		10	12	120
11	0	0		11	3	33
12	10	120		12	10	120
13	7	91		13	2	26
14	1	14		14	1	14
15	9	135		15	2	30
16	0	0		16	0	0
18	10	180		18	3	54
20	2	40		20	0	0
22	1	22		22	1	22
24	5	120		24	1	24
25	2	50		25	0	0
26	3	78		26	0	0
27	1	27		27	0	0
28	1	28		28	0	0
30	0	0		30	0	0
32	0	0		32	0	0
33	0	0		33	0	0
34	0	0		34	0	0
36	0	0		36	0	0
38	1	38		38	0	0
40	0	0		40	0	0
42	0	0		42	0	0
44	0	0		44	0	0
48	1	48		48	0	0
52	0	0		52	0	0
54	1	54		54	0	0
etc.				etc.		
Total Oak:		**1135**		**Total Other:**		**443**

TOTAL TREES TO BE PROPOSED

Land Use Type & Species	Total Plants		Total Inches
Common Areas			
Crape Myrtle (3" cal)	10		30
Sabal Palm (2" cal)	18		12
Southern Magnolia 2" cal)	7		14
Red Maple (2" cal)	15		30
Bald Cypress 2" cal)	6		12
American Sycamore (2" cal)	30		60
Type A Buffer			
Live Oak 2" cal)	22		44
Southern Magnolia (2" cal)	19		38
Type B Buffer			
Southern Red Cedar 2" cal)	26		52
Longleaf Pine (2" cal)	65		130
Lots			
Multi-trunk Tree (Crape Myrtle, 3" cal)	134		402
Palm Tree (Sabal Palm)	306		204
Shade Tree (Sycamore, Magnolia, Live Oak, Red Maple, 2" cal)	690		1,380
Total Replacement Inches Proposed	2,408		

TOTAL TREE INCHES TO BE REPLACED/PLANTED

Live Oaks to be replaced inch for inch.
Others to be replaced inch for 1/3 inch.

	Live Oaks			Other Trees		
			Total Inches			Total Inches
			1370			**358**
Inch for inch			1370	1/3rd of Total		119.3333
Total inches required			**1489.333333**			
Total inches proposed			**2408**			

TREE INCHES NOT REPLACED (REMOVED MINUS PLANTED)

	Live Oaks			Other Trees		
			Total Inches			Total Inches
			0			**0**

Total number of tree inches removed and are not able to replace onsite

Tree mitigation variance required if this is greater than 0

Tree Mitigation - $50/inch of the total caliper inches of replacement trees for which the variance is approved, but not to exceed $500 for each 2,000

NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: JMG
CHECKED BY: JSG
DRAWN BY: JGE
SCALE: AS NOTED
PROJECT NUMBER: 6216-005
PLAN DATE: AUG 2015

GENESIS
FORMULATION REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA 0000660 FL LB 0006616 FL LC 26000202

PREPARED FOR

CWES XXI, LLC

SEAL

JAMES S. GILMAN R.L.A.
License Number 0001628

SHEET TITLE
LANDSCAPE NOTES AND DETAILS

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
L-08

Printed: August 31, 2016 (3:00pm EST) by: jwitt
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ADDRESSING DEPARTMENT
GIS / ADDRESSING
PASCO COUNTY GOVT. CENTER
8731 CITIZENS DRIVE, SUITE 310
NEW PORT RICHEY, FL 34654
Phone: (727) 815-7154

http://www.pascocountyfl.net/

Welcome from the Addressing Department,

Every Second Counts in Emergency Response! In order to comply with E911 and **National Emergency Number Association (NENA) standards,** all street names in Pasco County must be approved by the Addressing Department. To name a new street, there is a fee of $40.00 per street name.

Please submit the number street names that are being requested.

Number of Street Names Requested:	8	X $40.00 per street name
Total Amount Due:	$ 320.00	Account: GIS Services - 204

Payment options:

In person between 8:00 a.m. and 4:00 p.m. in any of our **CENTRAL PERMITTING OFFICES** as follows:

Pasco County Govt. Center
14236 6th Street, Suite 203
Dade City, FL 33523

Pasco County Govt. Center
4111 Land O'Lakes Blvd, Suite 205
Land O' Lakes, FL 34639

Pasco County Govt. Center
8731 Citizens Drive, Suite 230
New Port Richey, FL 34654

By Mail:

Pasco County Govt. Center
Addressing / GIS
8731 Citizens Drive, Suite 310
New Port Richey, FL 34654

Checks should be made payable to: **PASCO COUNTY BOCC**

When mailing this form, include a CAD file showing all streets (if applicable).

CONTACT INFORMATION:

Requestor's name:	David Fleeman, P.E.
Business name:	Genesis Group
Address:	3910 US HWY 301 N Suite 140 Tampa, FL 33619-1282
Phone Number:	813-620-4500
E-mail Address:	dfleeman@genesisgroup.com

If you have any questions you may contact the addressing department at:
(727) 815-7154 or (800) 368-2411

Please fill out information for each street name you are requesting on the reverse side of this letter.

Please provide a few extra names in case your preferred name(s) are not approved.

	Proposed Street Name	Approved Yes	Approved No
1	Lovelace Court	X	
2	Sammet Way	X	
3	Holberton Drive	X	
4	Hoover Lane		X
5	Hopper Lane		X
6	Jones Way		X
7	Wilson Trail		X
8	Meninsky Court	X	
9	Goldstine Boulevard	X	
10	Williams Court		X
11	Perlman Parkway	X	
12	Bartik Drive	X	
13	McNulty Way	X	
14			
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30			

Please refer to the attached list of street names that are already in use in Pasco County and may **NOT** be used again.

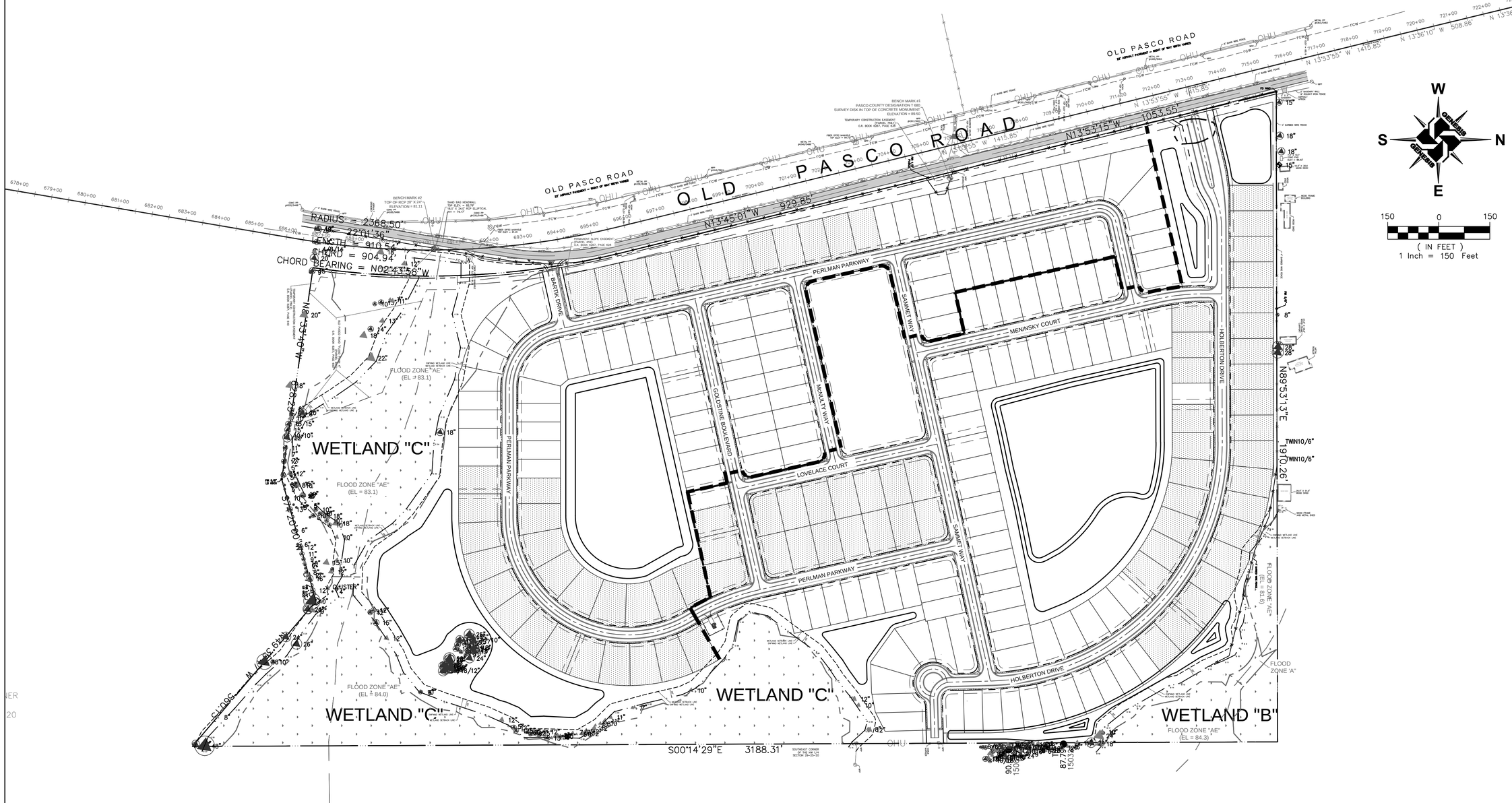
GRANTHAM RANCH EAST

WESLEY CHAPEL, FL

PREPARED FOR:

CWES XXI, LLC

334 EAST LAKE RD. #172
PALM HARBOR, FL 34685
(727) 787-6330



NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY:	DBF	CHECKED BY:	DBF
DRAWN BY:	DBF/PGC	SCALE:	1" = 150'

PROJECT NUMBER 6216-005
PLAN DATE AUG 2015

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4980 www.GenesisGroup.com
FL CA-0000849 FL LB-0000616

PREPARED FOR:
CWES XXI, LLC

SEAL
DAVID B. FREEMAN, P.E.
License Number 63502

SHEET TITLE
STREET NAMES PLAN

PROJECT NAME
GRANTHAM RANCH EAST

SHEET NUMBER
1 OF 1

Printed: August 26, 2015 (4:19pm EST) by: dsanvijo
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TABLE 1: PROJECT WETLAND (WL) AND OTHER SURFACE WATER (SW) AND IMPACT SUMMARY

WL & SW ID	UMAM ASSESSMENT AREA NAMES	WL & SW TYPE	WL & SW SIZE (ACRES)	WL & SW NOT IMPACTED (ACRES)	TEMPORARY WL & SW IMPACTS		PERMANENT WL & SW IMPACTS		MITIGATION ID
					IMPACT SIZE (ACRES)	IMPACT TYPE	IMPACT SIZE (ACRES)	IMPACT TYPE	
WL-A	Wetland A	641	0.07				0.07	F	Not Required*
WL-B	Wetland B	630	2.91	2.909	0.001	O			
WL-C	Wetland C	630/641	13.6	13.59	0.01	O			

Comments: * In accordance with the SWFWMD Basis of Review Section 3.2.2.1, isolated wetlands less than one half acre in size will not be required to comply with the provisions of subsections 3.2.2 through 3.2.3.7 and 3.2.5 through 3.3.8. Therefore, the impact to Wetland A should not require mitigation.

Codes (multiple entries per cell not allowed):
- Wetland & Surface Water ID: Include ID on submitted wetland and surface water impact maps
- Wetland Type: from an established wetland classification system
- Impact Type: D=dredge; F=fill; H=change hydrology; S=shading; C=clearing; O=other

$537.00 - Environmental Fee paid.